

# Rock Products

DEVOTED TO  
Concrete and Manufactured  
Building Materials

Volume XI.

CHICAGO, ILL., APRIL 22, 1912.

Number 10.

**CAROLINA PORTLAND CEMENT COMPANY**

We are the largest distributors of Portland Cement, Lime Plaster, Fire-brick and General Building Material in the Southern States, and have stocks of Standard Brands at all of the Atlantic and Gulf Seaports, and at our interior mills and warehouses, for prompt and economical distribution to all Southern territory. Write for our delivered prices anywhere. Also Southern agents for the "Dehydrated" waterproofing material. "Universal," "Acme" and "Electroid" Brands Ready Roofing. Get our prices.

Charleston, S. C.    Birmingham, Ala.    Atlanta, Ga.    New Orleans, La.

**DEXTER** Portland Cement  
THE NEW STANDARD

Sole Agents **SAMUEL H. FRENCH & CO.** PHILADELPHIA


**UNION MINING COMPANY**

Manufacturers of the Celebrated

**MOUNT SAVAGE**  
FIRE BRICK  
GOVERNMENT STANDARD.

DEVOTE a special department to the manufacture of Brick particularly adapted both physically and chemically to

**Lime Kiln and  
Cement Kiln  
Construction**

Large stock carried. Prompt shipments made. Write for quotations on Standard and Special shapes, to

**UNION MINING CO.,**  
Mount Savage, Md.

CAPACITY, 60,000 PER DAY.  
ESTABLISHED 1841.


**Special Features in This Number**

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**FOR GRIFFIN  
TUBE AND  
BALL MILLS**

Branches:

**CHICAGO BELTING CO.****PURE OAK TANNED LEATHER BELTING**

Send for Our Illustrated Catalog

**111 North Green St., CHICAGO****NEW YORK****PHILADELPHIA****NEW ORLEANS****PORTLAND, OREGON**

**FOR  
DAMP  
PLACES**

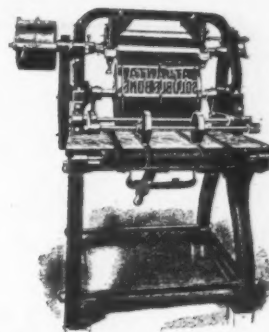
**KOEHLER BAG PRINTER**

is not only the fastest bag printer on the market---but the best and cheapest as well.

Write to us today for full particulars and prices. Hundreds of them in daily use giving perfect satisfaction.

**The Henry L. Koehler Manufacturing Co.**

410 W. Main Street, Louisville, Kentucky



**Phoenix Portland Cement** UNEXCELLED FOR ALL USES.  
Manufactured by  
**PHOENIX PORTLAND CEMENT CO.**  
NAZARETH, PA.

Sole Selling Agent, **WILLIAM G. HARTRANFT CEMENT CO**  
Real Estate Trust Building, PHILADELPHIA, PENNSYLVANIA.

**Ottawa Silica Co.'s Washed White Flint Sand**

Is used for sawing stone in more than a dozen states. Cuts more and lasts longer than any other sand on the market. Unexcelled for Roofing, Facing Cement Blocks, White Plaster, etc. Freight rates and prices on application.

**OTTAWA SILICA CO.,****Ottawa, Ill.**

## The Ironton Portland Cement Co.

Manufacturers of the  
Celebrated Limestone Brand of Portland Cement

Used by the Railroads in Kentucky, Ohio, West Virginia, and Virginia during the past five years. Cement as finely ground as any on the market. Guaranteed to pass all the standard specifications.

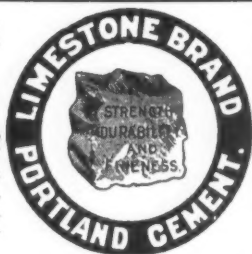
Plant located at Ironton, O., within easy access to seven States, namely, Ohio, Indiana, Kentucky, West Virginia, Virginia, Tennessee and North Carolina.

Shipments via the N. & W. Ry., C. & O. Ry., C. H. & D. Ry., D. T. & I. Ry., or Ohio River.

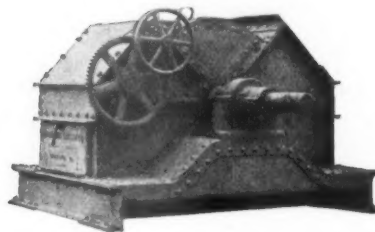
Write for Prices

## The Ironton Portland Cement Co.

Ironton, Ohio



## "PENNSYLVANIA" HAMMER CRUSHERS



For Pulverizing Limestone, Lime, Cement Rock, Marl, Shale, Etc.

Main Frame of steel, "Ball and Socket" Self aligning Bearings; forged Steel Shaft; Steel Wear Liners; Cage adjustable by hand wheel while Crusher is running. No other hammer Crusher has such a big Safety Factor.

**PENNSYLVANIA CRUSHER CO.**  
Philadelphia  
New York Pittsburgh



Montreal	Port Colborne
Hull	Shallow Lake
Belleville	Marlbank
Lakefield	Winnipeg
Calgary	Exshaw

For Prices Any Where in  
CANADA  
Write or Wire Our Nearest Sales Office

## Canada Cement Company LIMITED

Montreal = Toronto  
Winnipeg = Calgary

ONE GRADE—ONE BRAND



## Alpha Portland Cement

Best in the World for  
Sidewalks

Write for our Handsomely Illustrated Book. Sent Free.

General Offices: No. 7 Center Square, EASTON, PA.

—SALES OFFICES:—

The Oliver Bldg., PITTSBURGH.  
Builders Exchange, BALTIMORE.  
Marquette Building, CHICAGO.  
Harrison Building, PHILADELPHIA.

Builders Exchange, BUFFALO.  
Board of Trade Bldg., BOSTON.  
Hudson Terminal Bldg., N. Y.  
Nat'l Bank Bldg., SAVANNAH, GA.



## Quality, Quantity and Co-operation

Let our nation-wide co-operative advertising campaign focus the demand for cement into your warehouse. Let our eleven mills supply your need and let our quality insure you increasing demands for

## Lehigh Portland Cement

Chicago, Ill.

Allentown, Pa.



## "THE BEST IS NONE TOO GOOD" HIGHEST GRADE of Portland Cement

Every Barrel Absolutely Uniform.

R. R. facilities especially adapted for prompt shipments in the northwest.

Capacity 1,500,000 bbls. Yearly.

## NORTHWESTERN STATES PORTLAND CEMENT COMPANY

MASON CITY, IOWA



## "WOLVERINE"

The Alright Cement

MADE RIGHT SOLD RIGHT  
WORKS RIGHT  
WEARS RIGHT

The Best is None Too Good For You.  
Insist Upon.

## "WOLVERINE"

Write for Booklet and Quotations.  
Factories at Coldwater and Quincy, Mich.  
Capacity 3500 Daily.

## WOLVERINE PORTLAND CEMENT COMPANY

W. E. COBEAN, Sales Agent,  
Coldwater, Michigan

Main Office, Coldwater, Mich.

Tell 'em you saw it in ROCK PRODUCTS





HOWARD ARNOLD  
DAYTON, OHIO

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# Rock Products

DEVOTED TO  
Concrete and Manufactured  
Building Materials

Volume XI

CHICAGO, ILL., APRIL 22, 1912

Number 10

## THE POTOMAC REFINING COMPANY

**Lime and Hydrating Plant Recently Completed Near Harper's Ferry, W. Va., is a Model of its Kind—  
Modern Methods and Machinery and Ideal Location.**

One of the finest lime hydrating plants recently completed is that of the Potomac Refining Company, located on the Chesapeake & Ohio Canal, four miles north and east of the old historic village of Harper's Ferry, W. Va.

The limestone ledge rises directly from the edge of the canal. This stone, as analyzed by Wirt Tassin, Ph. D., of Washington, D. C., averages 96.43 calcium carbonate—or, in other words, it is practically pure limestone. There is but a comparatively small amount of stripping to do and there is a large quarry face which enables them to take out the limestone at a very small cost.

This company owns considerable property in this territory, all rich limestone, insuring a practically inexhaustible supply of material.

They have five modern steel kilns designed by Ambrose B. Allen, of Union Bridge, Md.

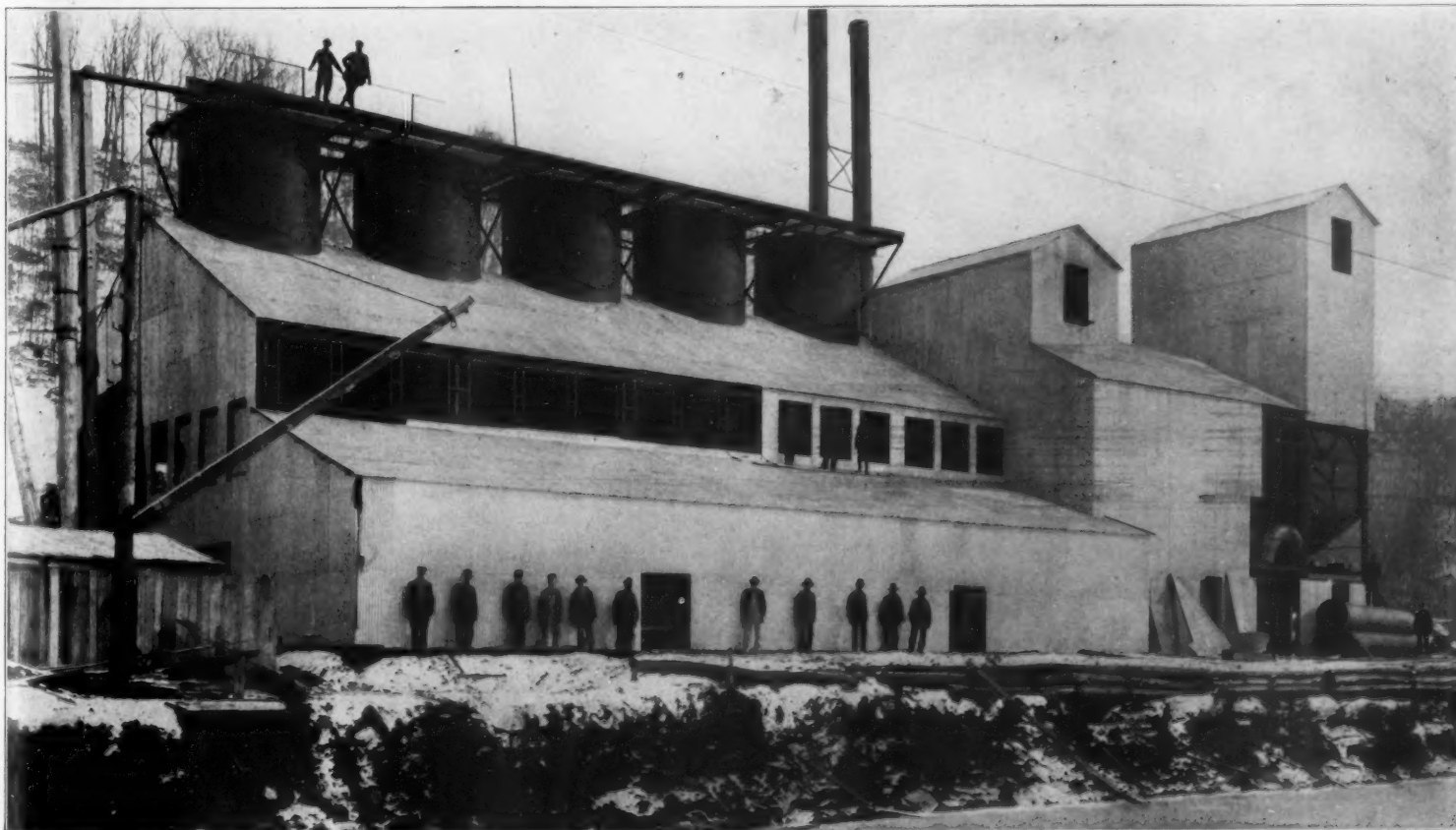
A splendid view of the plant is shown in the illustration printed on this page. Mr. Allen is recognized as an expert in his line of work, and the general arrangement of the kilns and quarry is ideal, insuring a very low cost of production and a very high-grade product.

A. N. White, who has been in charge of the construction of the plant, is superintendent of the mill, and brings to his position a thorough knowledge of his business gained by long experience in constructing and operating various lime plants. It goes without saying that the operating end of the Potomac Refining Company's lime and hydrating plant will be well taken care of.

When this company first decided to build a lime plant they investigated all the hydrating systems in this country and finally decided on the Kritzer process. Charles Kritzer, of the Kritzer Company, of Chicago, installed the plant, which is one of the well-known Kritzer continuous types. The photograph of this new hydrator shows the details of the mechanism.

The buildings housing the plant are all of steel and concrete, and no expense has been spared in any department to make this plant one of the best in point of equipment in this country.

As is well known, hydrated lime has long since passed the experimental period and is now recognized as a staple building material. Many retailers  
(Continued on Page 39.)



GENERAL VIEW OF LIME AND HYDRATING PLANT OF THE POTOMAC REFINING COMPANY, NEAR HARPER'S FERRY, W. VA.

# The Giant Griffin Mill

TAKES Clinker Kiln Size.  
GIVES A Finished Cement  
Ready to Sack.

## Capacity

Minimum, 12 bbls. Maximum, 17 bbls.  
Per Hour.

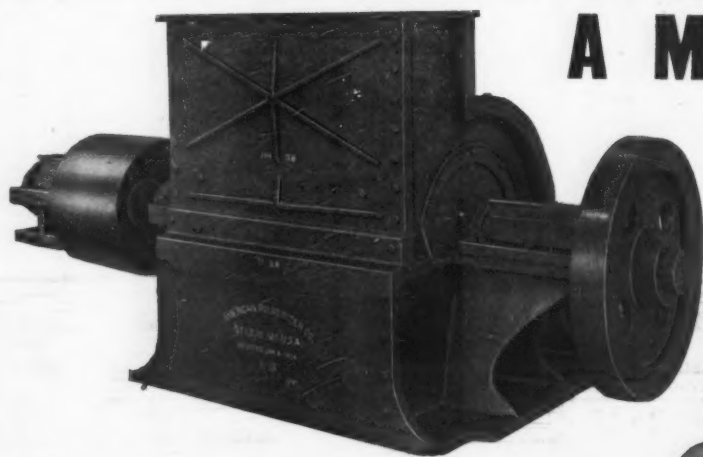
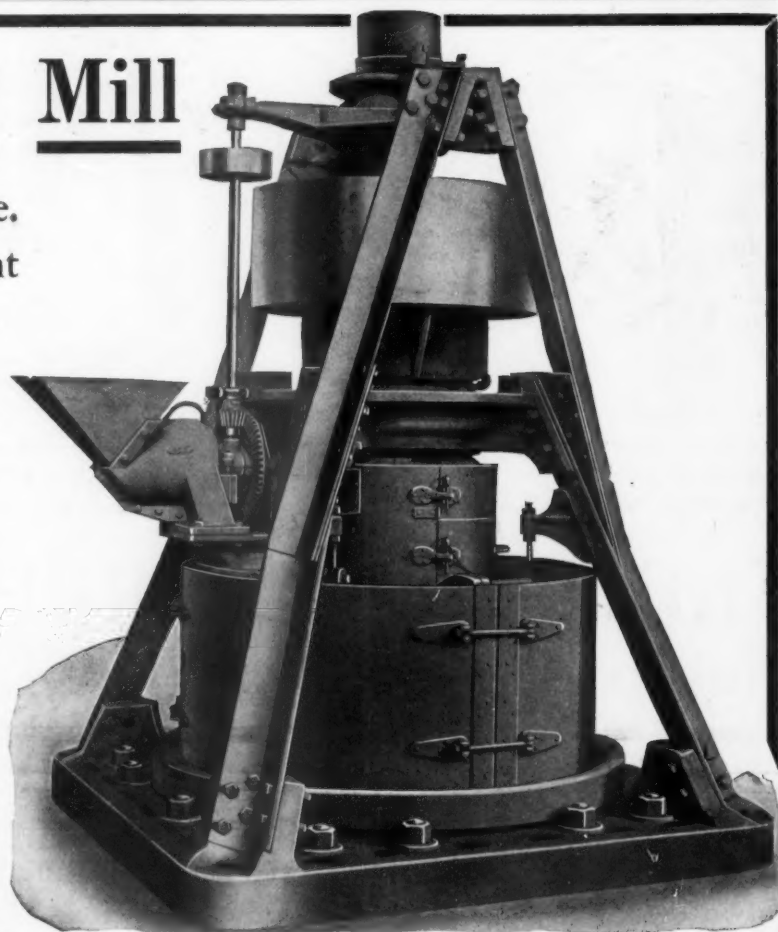
## Power

From 60 to 65 H. P. Operates Mill at Full  
Capacity

Upkeep under 1 Cent per bbl.

THINK IT OVER

**Bradley Pulverizer Co.**  
BOSTON, MASS.



**A MACHINE** that can **A TON**  
of limestone, granite, ore, sandstone,  
gravel, etc. to a given  
**FINENESS**

with the least cost of maintenance and  
power, admittedly **IS THE BEST.**

Not only **USERS**, but **COMPETITORS**, have told us our  
**RING PULVERIZER** is superior in hard material grinding

## PROOF RESTS IN THE HANDS OF USERS

who have operated our **RING PULVERIZER** grinding  
limestone for 18 months without a penny of main-  
tenance cost.

**BEST** because no other Machine can **COLLAR** the  
**JOB.** Buy the Machine that is guaran-  
teed and makes its guarantee good. Write for  
circular and particulars.



**AMERICAN PULVERIZER COMPANY,** 410 Jaccard  
Building **St. Louis, Mo.**

Tell 'em you saw it in ROCK PRODUCTS



## “Forgot to Oil It—”

**There Is Only  
One Crusher  
with an Automatic  
Oiling System**

The oft-repeated story of the man whose plant is out of order. Don't rely on memory, and you'll avoid expensive shut-downs. In the Symons Breaker, lubrication is automatic. The oil pump's memory never fails. Read the rest.

### *The Crusher's Life Blood is Oil.*

Rock breakers work under most trying conditions, continually enveloped in a cloud of dust. It is very difficult, even with the “tightest fit,” to exclude dirt from the running parts. The bearings are subject to immense pressures, very irregularly applied. When you add to these unfavorable conditions the further danger of careless supervision, any mechanic will admit the vital importance, to the practical quarryman, of the automatic oiling system peculiar to the

## SYMONS CRUSHER

The oil pressure excludes the dirt. Where oil cannot get out, dirt cannot get in. The steady flow of oil (volume variable to suit conditions) washes the bearings clean, smooth and cool, immerses the gears and then returns to the tank to be used again.

It's a winning combination—only two big bearings, carrying a greatly reduced working pressure, guarded from dirt and protected from wearing and heating by a continuous oil-flow, with the working load evenly distributed over the surface of the long eccentric. But that's not half the story which we would like to tell you. Write for our catalogue No. 166.



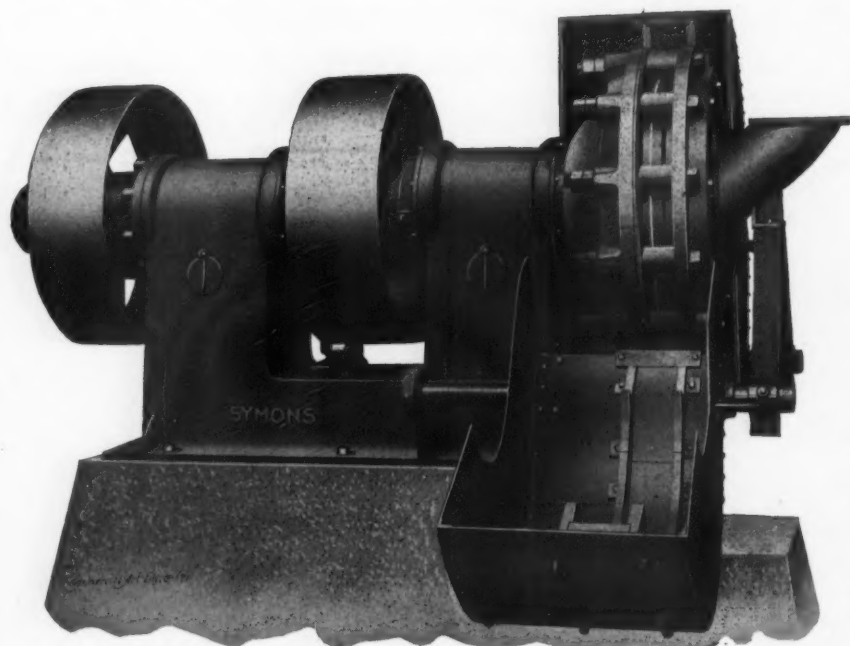
## THE T. L. SMITH CO.

1322 MAJESTIC BLDG.  
MILWAUKEE, WIS.

OLD COLONY BLDG., CHICAGO, ILL.  
SCHOFIELD BLDG., CLEVELAND, O.

Tell 'em you saw it in ROCK PRODUCTS

# HAVE YOU NOTICED



That the Symons Disc Crusher is the only crusher specially advertised for crushing trap-rock, hardest granite, or boulders to small sizes?

Is it not reasonable that a machine built for such work is the most durable when used to reduce limestone rejections? Extraordinary Capacity demonstrated by trial.

We sell the Disc Crusher on TRIAL, allowing return privilege. Not one was returned in 1911.

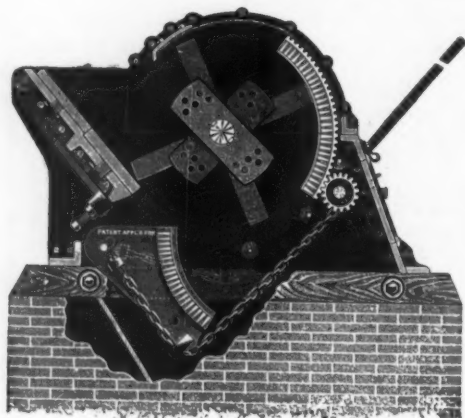
Address

**SYMONS BROTHERS COMPANY,** Majestic Building Milwaukee, Wis.

## WILLIAMS JUMBO CRUSHER

Will take 12 to 14 in. cubes Limestone or Shale and reduce to 2 inch,—1½ inch,—1 inch,—¾ inch and finer.  
**1 No. 6 Recently Replaced 3 No. 5 Gyratories.**

"MANUFACTURED AND LICENSED UNDER 87 SEPARATE AND DISTINCT PATENTS."



WITH DUMP CAGE OPEN.

**WORKS: 2701 N. Broadway, ST. LOUIS**  
**SAN FRANCISCO, 347 Monadnock Bldg.**

Williams Patent Crusher & Pulverizer Co., St. Louis, Mo. Iola, Kansas, December 6th, 1910

Gentlemen: Your No. 6 Jumbo Crusher recently installed by us is handling about 100 tons per hour of crushed limestone from a No. 8 Gyratory Crusher, the largest pieces of which will average six inch cubes.

The capacity of our elevator is 115 tons per hour and the machine easily overloads the elevator. We are now installing an elevator of double the CAPACITY FOR THIS CRUSHER. Your guarantee was fifty tons per hour from this machine.

Your crusher reduces all of our material to three-quarter inches and finer, and the majority to one-quarter inch.

We have been operating the machine about eight weeks and find same most satisfactory.

Yours very truly, THE IOLA PORTLAND CEMENT CO., F. L. WOODS, Supt.

**MADE IN 8 SIZES—ALL PARTS ADJUSTABLE**

Ask Iola Portland Cement Co., Texas Portland Cement Co., Southwestern Portland Cement Company,—or us. Write for Bulletin 12.

**WE ALSO MAKE LIMESTONE GRINDERS**

**THE WILLIAMS PATENT CRUSHER  
& PULVERIZER COMPANY**

**OLD COLONY BL'DG.——CHICAGO**

Tell 'em you saw it in ROCK PRODUCTS



# Knickerbocker Portland Cement

Semi-Wet Process

Lightest (gray) Color of all Portland Cements, Manufactured in a Model Plant by Modern Methods, Shipped by Rail or Water—  
Quick Deliveries

HIGHEST



QUALITY

Users of "Knickerbocker" Say it is Uniform, Finely Ground, and Works Most Satisfactorily

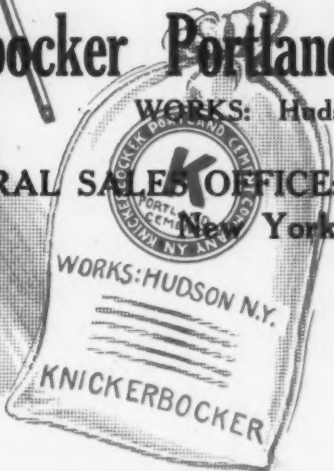
## Join the "Knickerbocker Family"

*Permit Us To Ship You Now*

### Knickerbocker Portland Cement Company

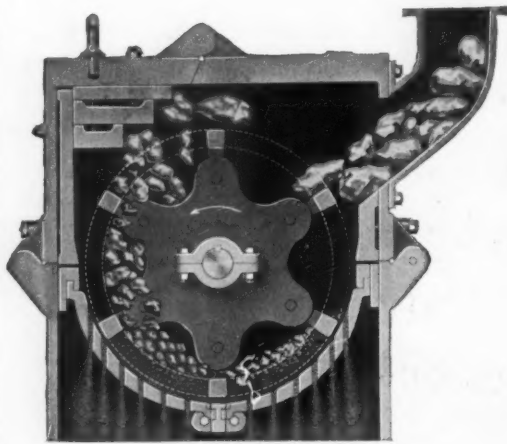
WORKS: Hudson, N. Y.

GENERAL SALES OFFICE: One Madison Avenue  
New York City



Tell 'em you saw it in ROCK PRODUCTS

# The Gardner Crusher



OUR NEW MODEL

## MR. LIME MANUFACTURER:

Here is a letter which speaks for itself about the work of our machine on **LIME**

Ask For  
Catalogue

The above is only one of many testimonials

## Gardner Crusher Company

556 West 34th Street

New York

To Gardner Crusher Company,  
New York City.

March 5th, 1912.

Gentlemen:

In reply to your letter of March 1st, would say that we are very well pleased with the Gardner Crusher.

On burned lime we are crushing about five tons per hour and getting a product about as follows:

Through 20 and on 40 screen . . . 25%

Through 40 and on 100 screen . . . 50%

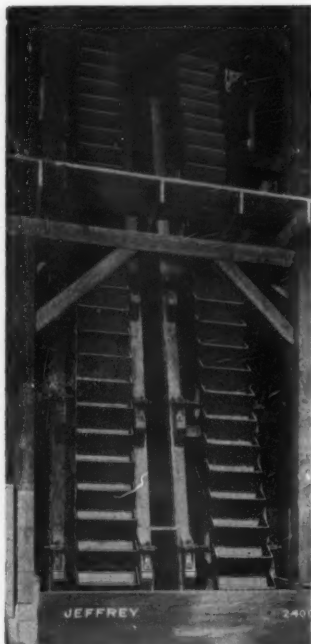
Through 100 . . . . . 25%

The Gardner Crusher shows no signs of wear and does the work of higher priced machines with less than one-half the power.

We enclose sample of the crushed lime.

Yours very truly, CHESHIRE LIME MFG. CO.

## JEFFREY CONTINUOUS BUCKET ELEVATORS



Adapted for handling stone, ores, cement, coal, sand, etc. combine highest efficiency with minimum cost for installation, operating and maintenance costs.

Buckets are designed especially for the hard service, and to insure a perfect discharge of materials.

We also design and build Conveyers of various types, Revolving and Vibrating Screens, Pulverizers, Coal and Ashes Handling Equipments, Power Transmission Machinery, Concrete Mixers, Excavating Machinery, etc.

Send for our Catalogs.

Jeffrey Manufacturing Co., Columbus, O.

New York  
Boston  
Montreal  
Pittsburg

Charleston, W. Va.  
Atlanta, Ga.  
Birmingham  
Chicago

Saint Louis  
Denver  
Seattle

## PUT YOUR RIGID ECCENTRIC GYRATORY CRUSHER

IN THE



## SCRAP PILE AND INSTALL OUR BRONZE BALL GYRATORY CRUSHER

Sounds like revolution, but it is only evolution in the manufacture of an improved type of this crusher.

It would be economy to adopt this suggestion on account of the low 1st cost, the saving in power, the low cost for repairs and the increased capacity.

**PRICES ARE LOW FOR IMMEDIATE DELIVERY**

Ask for catalogue

**CHALMERS & WILLIAMS**

General Office & Works - Chicago Heights, Ill.  
New York Office - - - Singer Building



Tell 'em you saw it in ROCK PRODUCTS



## The Second-Hand Value of a Breaker

Should be considered by the Contractor who expects his Business to Grow

A Gates Breaker sold twenty-five years ago has been owned by eight different concerns and is still in service. The present owner of this breaker bought it three years ago and it is still serving him. Since buying this one he has purchased two others.

The business of the original purchaser has continually grown. He has bought five other Gates Breakers of larger size and is now operating three of them.

When the capacity of a Gates Breaker is outgrown, the price that can be obtained for it helps materially in the purchase of a larger one.

*"The Maker Stands Behind It"*

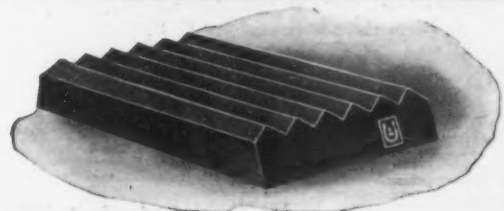
**Allis-Chalmers Company**  
Milwaukee Wisconsin

## TISCO MANGANESE STEEL CASTINGS

Quick Service Prompt Deliveries

**SEND US YOUR ORDERS**

**Taylor Iron and Steel Co.**  
High Bridge, New Jersey



### TITAN MANGANESE STEEL

Unequaled for wearing parts of Jaw Crushers, Gyratory Crushers, Cement Machinery, Coal Breaking Machinery, Steam Shovels and Dredges. Send us your inquiries.

**TITAN STEEL CASTING CO.**  
NEWARK, NEW JERSEY

CHICAGO  
RICHMOND

SAN FRANCISCO  
BOSTON

## TRUE MANGANESE STEEL CASTINGS

MANGANESE CHAIN LINKS Outwear cast links of other material



Write for list of users of our castings in your vicinity.

Also Open Hearth Steel Castings and Alloys: Vanadium, Chrome, Nickel, etc.

**AMERICAN STEEL FOUNDRIES**

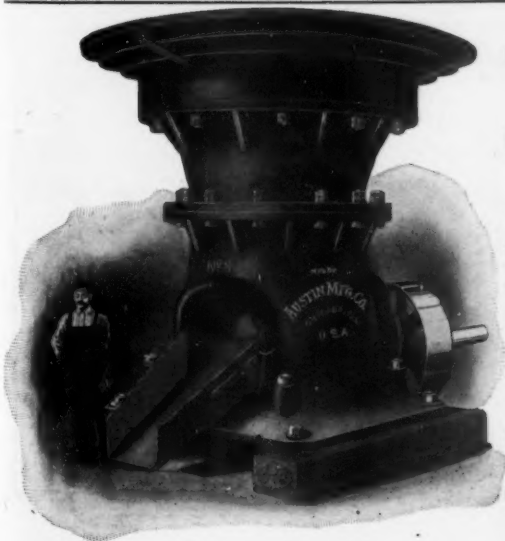
New York

Pittsburg

Chicago

St. Louis

San Francisco, 701 Monadnock Building



## AUSTIN GYRATORY CRUSHER

The World's leading rock and ore breaker.

The only self lubricating Crusher.

The only Crusher having double countershaft bearing.

Simple construction, correct design.

Thousands in use.

Plans and specifications furnished for any sized plant.

Send for Catalogue No. 17.

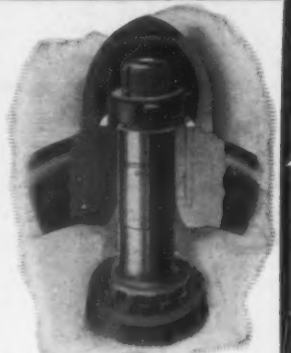
All experienced users recognize that the efficiency and durability of the suspension bearing as applied to Gyratory Crushers, depends upon locating the bearing at the point of least gyration or movement of the main shaft.

A perfect suspension can be made only by locating the bearing at the point where there is no movement of the shaft. That being a mechanical impossibility it follows that superiority is obtained in fixing the bearing at the point of least gyration of the shaft.

As the accompanying cut will show, the movement of the shaft at the point of suspension in the Austin Crusher is reduced to the minimum and practically eliminated. Consequently the highest possible degree of efficiency and durability is obtained.

**Austin Manufacturing Co., Chicago**

Mussens Ltd., Montreal, Can., Canadian Sales Agents.



New York City Office  
1682 FULTON BUILDING  
Hudson Terminal

Tell 'em you saw it in ROCK PRODUCTS



# MAXECON

## Means MAXimum of ECONomy

Years of experience with the assistance of our hundreds of customers has found THE SOLUTION OF GRINDING HARD MATERIALS. The MAXECON PULVERIZER combines highest EFFICIENCY, greatest DURABILITY and assured RELIABILITY. Uses the LEAST HORSE POWER per capacity. Embodies the features of our Kent Mill with improvements that make it MAXECON.

**WE DO NOT CLAIM ALL of the CREDIT for this achievement**

We have enjoyed the valuable suggestions of the engineers of the Universal Portland Cement Co. (U. S. Steel Corp.), Sandusky P. C. Co., Chicago Portland C. Co., Marquette Cement Mfg. Co., Western P. C. Co., Cowham Engineering Co., Ironton P. C. Co., Alpena P. C. Co. Castalia P. C. Co., Pennsylvania P. C. Co., and many other patrons.

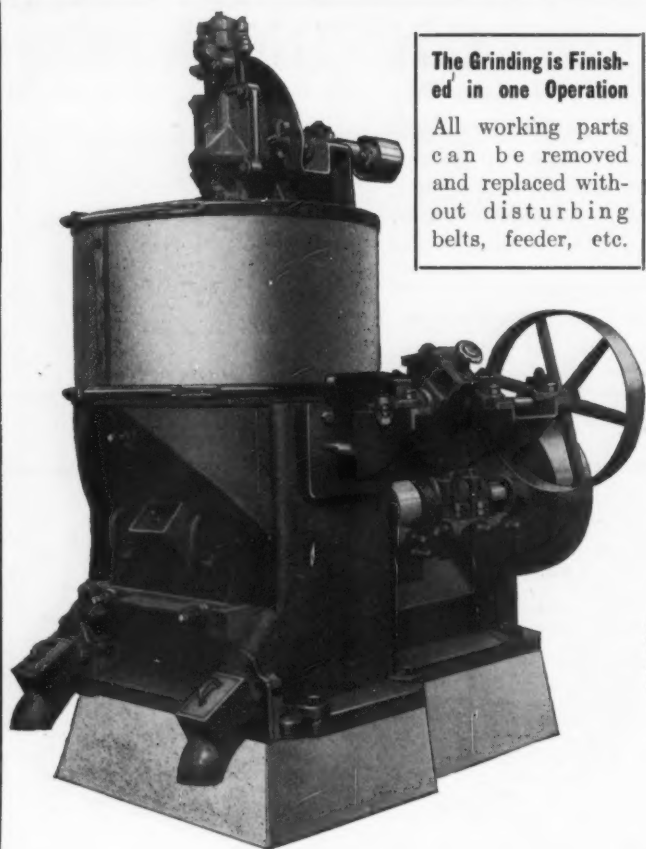
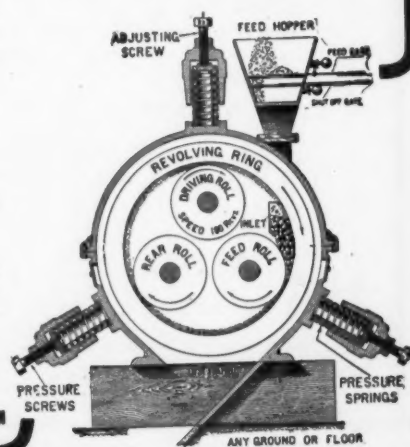
## THE RING WOBBLER

The FREE WOBBLING POUNDING RING instantly and automatically ADAPTS its position to the variations of work.

Its GRINDING ACTION is DIFFERENT than any other; besides the STRAIGHT rolling action of the rolls, the SIDE to SIDE motion of the ring makes the material subject to TWO crushing forces and DOUBLE OUTPUT results.

# KENT MILL CO.

10 RAPELYEA ST., BOROUGH OF BROOKLYN, N. Y. CITY  
LONDON, W. C., 31 HIGH HOLBORN  
CHARLOTTENBURG 5, WINDSCHEID STRASSE 31, BERLIN



**The Grinding is Finished in one Operation**

All working parts can be removed and replaced without disturbing belts, feeder, etc.

## BONNOT PULVERIZER

**Grinds and Screens Limestone, Raw Lime and Hydrated Lime**

**Does it at One Operation. Gives You Any Desired Fineness**

GRINDING LIME IS LARGELY A SCREENING PROPOSITION. THE BONNOT PULVERIZER HAS THE LARGEST SCREENING SURFACE AND CONSEQUENTLY THE GREATEST CAPACITY.

NO OTHER MACHINE LIKE IT IN THE ACCESSIBILITY OF SCREEN AND GRINDING PARTS.

**No. 4 Catalog Explains These Advantages**

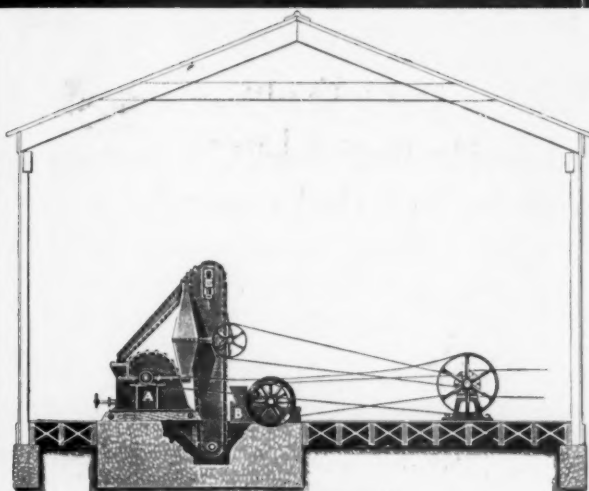
## THE BONNOT COMPANY

909 N. Y. Life Bldg.  
KANSAS CITY, MO.

**CANTON, OHIO**

Tell 'em you saw it in ROCK PRODUCTS





Stationary Plant

## Get Into the Game

**GRIND YOUR LIMESTONE SCREENINGS  
AND MAKE LIMESTONE FERTILIZER**

What Is Now a Dead Loss to Some Quarrymen  
Can Be Turned Into Good Profits

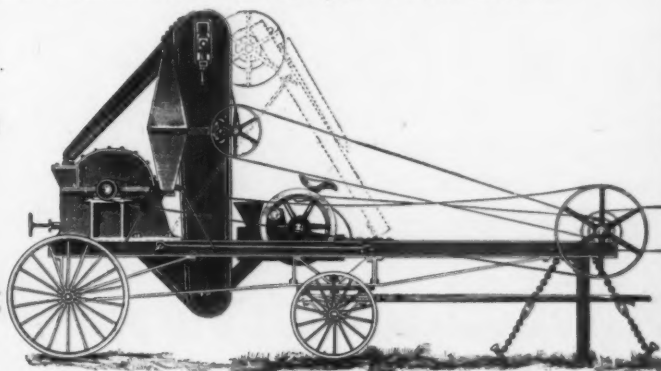
WE FURNISH COMPLETE PLANTS OF ANY CAPACITY DESIRED  
Manufactured and Licensed under 87 Separate and Distinct Patents

We now have over 30 plants in operation

BULLETIN NO. 4 EXPLAINS THE  
PROPOSITION

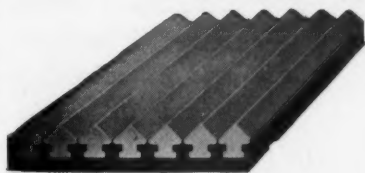
**The Williams Pat. Crusher &  
Pulv. Co.**

ST. LOUIS 2705 N. Broadway  
CHICAGO: Old Colony Bldg.  
SAN FRANCISCO: 428 Monadnock Bldg.



Portable Plant

### A Tempered Steel Jaw Plate for Blake Type Crushers



Canda Tempered Steel Crushers Jaw Plate

Patented March 31, 1908

The Canda Tempered Steel Jaw Plate for Blake Crushers is composed of Forged and Rolled Chrome Steel Bars, cast-welded and also mechanically interlocked into a backing of tough steel—and the wearing face is tempered to extreme hardness. We are equipped to supply both corrugated and smooth face plates for all sizes and makes of Blake Crushers.

The Canda method of cast-welding forged and tempered steel bars into a mild and tough Steel Backing, is adapted also to the construction of Cone Heads for Gyrotory Crushers, Segments for Corrugated Rolls, etc., etc.

Our products in this line are sold with our special guarantee that they will wear longer, give better satisfaction and, at our price, prove more economical than any others now on the market.

— Send for Descriptive Pamphlet —

Represented by

J. F. Spellman, 202 Century Building, Denver, Colo.

George T. Bond, Easton, Pa.

George W. Myers, San Francisco, Cal.

### CHROME STEEL WORKS

CHROME, N. J., U.S.A.  
FORMERLY OF BROOKLYN, N. Y.

## FARREL ORE AND ROCK CRUSHER

USED IN ALL PARTS OF THE WORLD—LARGE  
RECEIVING CAPACITY—SPECIALLY DESIGNED  
AND CONSTRUCTED FOR HARDEST KIND OF WORK  
COMPLETE CRUSHING PLANTS OUR SPECIALTY

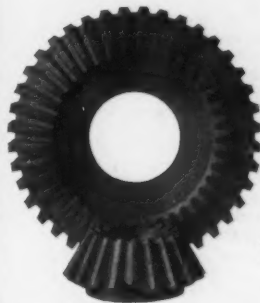
• SEND FOR CATALOGUE •

**EARLE C. BACON, ENGINEER.**

FARREL FOUNDRY & MACHINE CO. HAVEMEYER BUILDING, NEW YORK

### GEARS

Nearly all manufacturers of  
cement mill machinery use  
Nuttall Gears



The Nuttall Company has made a number of tests of cement mill installations, its engineers have a thorough knowledge of the operating conditions and will specify gears cut from material of the proper chemical constituents to assure Reliability and Low Maintenance Cost.

**Nuttall—Pittsburgh**

When in a hurry, wire us.

Tell 'em you saw it in ROCK PRODUCTS

## Pointers To Sand Lime Brick Manufacturers

If you want better brick, use

# MITCHELL LIME

It gives better results in sand lime mixtures than any other lime made. With its high calcium oxide content, it has more sand carrying capacity and gives greater strength. It combines with sand more intimately so as to form a closer and stronger bond. Its magnesia content is but one per cent, therefore, there will be no expansion due to hydration of this content after the brick is made.

That is the reason so many sand lime brick manufacturers are using Mitchell lime today.

Write for Prices to

## Mitchell Lime Company

Office:  
528 Peoples Gas Bldg, CHICAGO, ILL.

Works:  
MITCHELL, IND.



The  
National  
Lime &  
Stone Co.  
CAREY, OHIO

## Waste Means Loss of Money

WASTE means that you are reaching down into your pocket and meeting leaks that should not exist. For more than seven years we have been expounding the merits of

## Monarch Hydrated Lime

As a result, thousands of contractors will use no other. They have learned by experience that it more closely approaches perfection than any other lime, because there is absolutely no waste.

They know that it requires no screening.

That it takes more sand; gauges with one-third less plaster and spreads farther and easier than lump lime.

These are features that are causing thousands to use Monarch Hydrated Lime. Are you one of this number?



## Tiger Brand Hydrated Lime



## Insures Satisfied Customers

You want to push a brand that pushes you. One whose quality is so high that by carrying it your standard is raised.

To be sure that you have this quality, that every job where your goods are used is a satisfactory one, that every sale you make means more sales in the future, handle Tiger Brand Hydrated Cement.

Be ready for the early spring trade, write to-day for prices to

## The Kelley Island Lime & Transport Co.



Cleveland  
Ohio



## THE CURRY BAG TYER

—IS TYING—

OVER 200,000,000 BAGS A YEAR



Absolutely Secure.  
Ends Complaints.  
Mechanically Uniform.  
Faster than twine tying, twice as fast as sewing.  
No Skilled Labor.  
Cheapest Laborer can operate it.  
Simple.  
No Sore Hands.  
Labor Saver.  
Economical.  
Opens by untwisting with thumb and finger.  
No Cut Bags Returned.  
No Repair Expense.

SUITABLE FOR ANY BAG

Catalogue "E" and Prices on Request

CLIFFORD L. MILLER & CO.

110 East 23d Street

NEW YORK, U. S. A.

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# The Ohio and Western Lime Company

WORKS AT  
Huntington, Indiana  
Marion, O.  
Gibsonburg, Ohio  
Festoria, Ohio  
Sugar Ridge, Ohio  
Tiffin, Ohio  
Genoa, O.  
Limestone, Ohio  
Lime City, Ohio  
Portage, Ohio  
Lucky, Ohio  
Bedford, Ind.

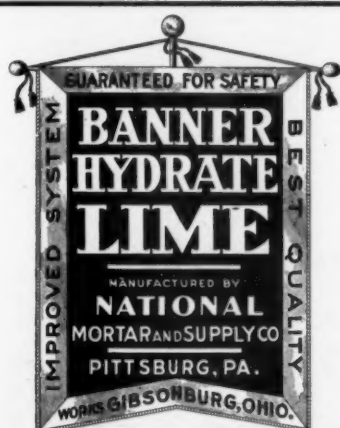
MANUFACTURERS OF AND WHOLESALE DEALERS IN

Ohio and Indiana White Finishing Lime, Ground  
Lime, Lump Lime, Fertilizer Lime, Hydrate  
Lime, Cement, Plaster, Hair, Etc., Etc.

Capacity  
8000 Barrels  
Per Day

MAIN OFFICE: Huntington, Ind.

Branch Office: Marion, Ohio.



## BANNER HYDRATE LIME

MANUFACTURED BY

NATIONAL MORTAR & SUPPLY CO.  
PITTSBURG :: PENNSYLVANIA

WORKS AT GIBSONBURG, OHIO

## CROWN HYDRATE

HIGH CALCIUM HYDRATED LIME

At present prices you can waterproof, improve the color and strengthen the texture of all cement construction and actually save money, because the Hydrate replaces the same amount of cement (15 to 25%).

Kritzer Vacuum Process

MARBLEHEAD LIME COMPANY

KANSAS CITY

CHICAGO

## DEALERS ATTENTION

We manufacture the STRONGEST LIME IN OHIO and can ship promptly in straight or mixed cars, Lime in bulk or barreled, "Masons Hydrate" for brick work and masonry, "Clover Grower" Hydrate for improving the soil. Also from our Northern Ohio plant, in straight car lots, "Lime Flour," a pure white magnesia Hydrate for white coat, none better, Quality the best.

A dealer wanted in every city to handle our products. Write or wire for prices.

**THE SCIOTO LIME AND STONE CO., Delaware, Ohio**

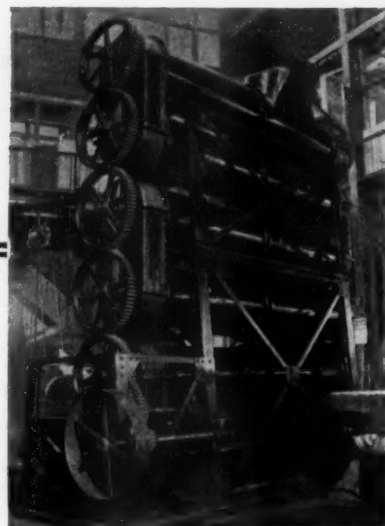
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# HYDRATED LIME

Bulletin No. 43

*The Government Lime Statistics for 1910 have just been issued. According to this report the quantity of lime manufactured in 1910 was less than that produced in 1909, while the quantity of Hydrated Lime manufactured showed an increase of more than 50%. This shows the drift of the lime business. What evidence could be more convincing?*



KRITZER CONTINUOUS PROCESS

## You Will Eventually Establish a Hydrating Plant Why Not Do It Now?

We can prove to you positively that by so doing,  
Your sales will be increased.  
Your expense of manufacture will be no more.  
Your overhead expenses will be less.  
Your product will always be perfect. We guarantee this absolutely.  
You will have every dealer praising your product.  
Every dealer will handle More Lime.

*The cost of installation is not heavy. Let us give you prices.*

Every concrete worker can do Better Work.  
Every concrete worker can do More Work in Less Time.  
He will make More Money and hence will wish to use More Lime.  
He can do the Same Work with Less Men.  
The work will be Impervious to Moisture.  
The Concrete will Work Easier and Look Better, in fact, Be Better.

We would be pleased to give you estimates covering **your particular case**, free of all charge.  
We can convince you that it has paid handsomely to erect a Hydrating Plant, not merely in one instance, but in every instance.

## The Kritzer Way Is the Right Way

98 per cent of all the ideas used in Hydrating Lime are Kritzer ideas.

**An Absolutely Perfect Product, Positively Assured by this Process.**

**A Bond Behind Every Guarantee.**

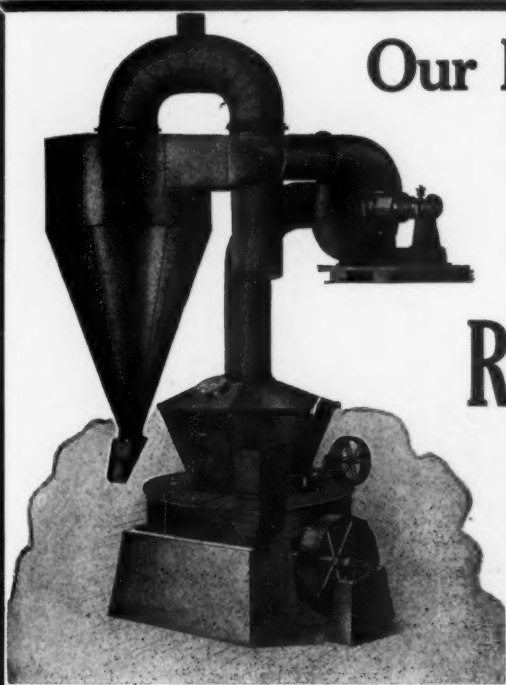
It takes several months to install a plant.

Why not take this matter up with us **Now** and get ready for business as soon as possible?

# The Kritzer Company

115 Adams Street  
Chicago, Illinois

Tell 'em you saw it in ROCK PRODUCTS



## Our Engineers May Help Solve Your GRINDING PROBLEMS

The Raymond Pulverizing System with Air Separation has solved many grinding problems in mills of widely differing character. For a finely and uniformly ground raw material or finished product, there is no system which equals the

## RAYMOND PULVERIZING AIR SEPARATING SYSTEM

By adjusting the mill to the required mesh the air separators automatically take the powdered product from the mill while the grinders are working and delivery is continuously made to the point desired.

No bolters, reels or screens are used, hence no clogging and no expensive upkeep for these antiquated devices.

No product escapes to choke the employees, hence there is no waste or tailings. Many industries have revolutionized their methods of manufacture and have effected savings amounting to hundreds of thousands of dollars per year by installing the Raymond System.

Consult our Engineers before you adopt the wrong pulverizing system.

We design special machinery and methods for Pulverizing, Grinding, Separating and Conveying all powdered products. We manufacture Automatic Pulverizers, Roller Mills, Vacuum Air Separators, Crushers, Special Exhaust Fans and Dust Collectors.

**Raymond Bros. Impact Pulverizer Co.,** 517 Laflin Street,  
Chicago, Ill.

PLEASE CUT OUT THIS

### REMINDER

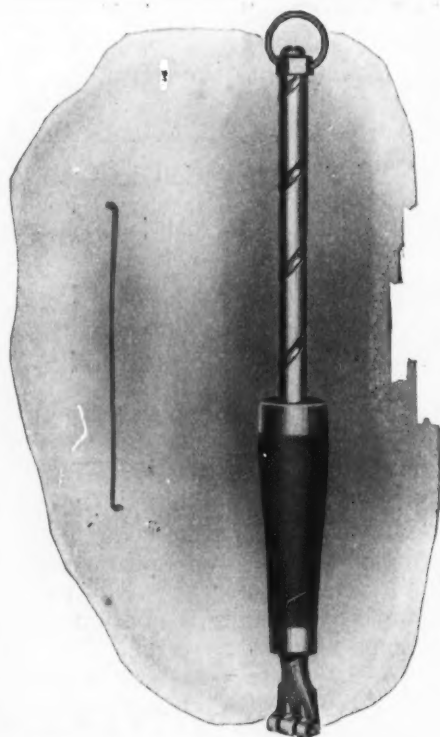
To write Raymond Bros. Impact Pulverizer Co., 517 Laflin St., Chicago, for their Book "I" on Modern Methods of Pulverization and Air Separation. (10)

"If your sales of Lime have fallen off through the competition of Gypsum Plasters and Portland Cement, the manufacture of **"Alca"** Lime will enable you to regain this trade."

### ALUMINATE PATENTS CO.

2211 Chestnut Street, PHILADELPHIA, PA.

Tell 'em you saw it in ROCK PRODUCTS

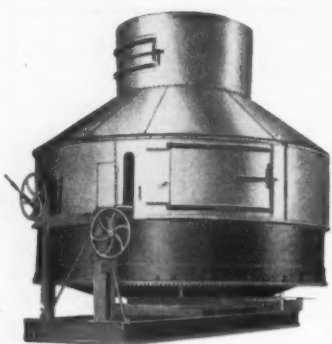


Manufacturers of wire bag ties for all purposes. All lengths wire ties manufactured for tying reinforcing rods. Write for prices, etc. Patent applied for.



## THE UNITED WIRE TIE COMPANY

1341 Nicholas Bldg., TOLEDO, OHIO "Dept. A"



Clyde Hydrator with Hood

## Judge a Hydrator by Its Product

Investigate Hydrated Lime of recognized merit in the large markets. Trace the source of the most popular Brands. Investigate the producers' business development and you will discover that CLYDE HYDRATORS have been instrumental in the growth of the business and directly responsible for the superiority of the Brand. If you happened to trace one popular Brand you would find eleven CLYDE HYDRATORS used in its production. The Clyde Process is the "common sense way," it builds, multiplies and maintains business. Catalogue and valuable booklet on Hydrated Lime to those really interested.

**H. MISCAMPBELL, 318 St. Croix Ave., Duluth, Minn.**

Patentee and Sole Manufacturer of Clyde Hydrators

## Farnam "Cheshire" Lime Co.

OF CHESHIRE, MASS.

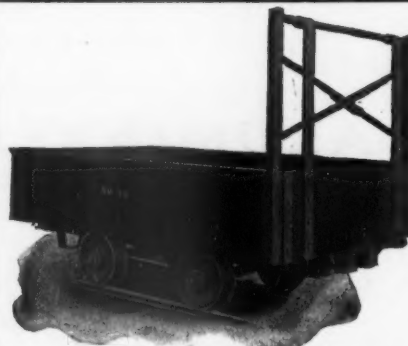
MANUFACTURERS OF THE

### Celebrated Cheshire "Finishing" Lime

Well known throughout New York and the Eastern States as the finest finishing lime manufactured. The special feature of this lime is its quick and even slacking, thus preventing any cracking or checking when put on the wall. It is the best lime used in the country today for all

### HIGH GRADE FINISHING WORK

Selling Department, 39 Cortlandt St., N. Y., C. J. CURTIN, Pres't.



## "INDUSTRIAL"

The Quarry Cars That Give the Service You Want

Carefully designed and built to give the longest and most satisfactory service under the severest exactions of quarry usage. There is an Industrial Car for every purpose and each is the best of its kind to be had.

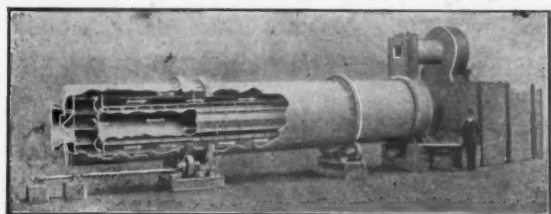
Illustrated Catalogue on Request. Write

## The Industrial Car Co.

Successor to THE CLEVELAND CAR CO., West Park, Ohio

Tell 'em you saw it in ROCK PRODUCTS





## Many Plaster Companies Use **RUGGLES-COLES** DOUBLE SHELL **DRYERS**

FOR drying gypsum and sand. In a recent test at a plaster company the Ruggles-Coles dryer showed an efficiency of 81.1%. Here are a few of the many installations in plaster works.

Acme Cement Plaster Co.	-	Grand Rapids, Mich.
Consumers Plaster Co.	-	Gypsum, Ohio
Granite Wall Plaster Co.	-	Point Clinton, Ohio
Michigan Plaster Co.	-	Wentworth, Mich.
Rock Plaster Co.	-	Hoboken, N. J.
Rockland Rockport Lime Co.	-	Brooklyn, N. Y.
Wasam Plaster Co.	-	Fort Dodge, Ia.

Ruggles-Coles Dryers are also built to dry cement rock, clay, marl, chalk, coal, organic materials, etc., etc. Over 14 years experience makes us capable of drying anything.

*Send us a sample of your product and let our engineers figure on your requirements*

**RUGGLES-COLES ENGINEERING COMPANY**  
50 CHURCH STREET, NEW YORK. CHICAGO OFFICE, McCORMICK BLD'G.  
37-51

## Quarries Using



## **EXPLOSIVES**

**Have Reduced  
The  
Cost of Dynamite  
Below  
Two Cents Per Ton  
Of  
Stone Blasted**

Ask for "Blaster's Explosives" Booklet No. 115

**E. I. du Pont de Nemours Powder Co.**  
Established 1802 WILMINGTON, DEL.

# AETNA

40 per cent Aetna Gelatin is the best explosive for breaking hard rock in wet or dry work, because it contains within a given space the greatest amount of rending power at the right speed for rock breaking. Waterproof, dense, uniform.

## **THE AETNA POWDER COMPANY** **7 SOUTH DEARBORN STREET, CHICAGO**

Bank of Commerce Building  
ST. LOUIS, MO.  
Knoxville, Tenn.

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Chattanooga, Tenn.

Woodward Building  
BIRMINGHAM, ALA.  
Iron Mountain, Mich.

Mass. Building  
KANSAS CITY, MO.

Terry Building  
DULUTH, MINN.

Xenia, Ohio

Tell 'em you saw it in ROCK PRODUCTS

# DIRECT HEAT DRYERS

FOR

**BANK SAND  
GLASS SAND  
ROCK, CLAY  
COAL, ETC.**

**All Mineral, Animal and Vegetable Matter.**

We have equipped the largest plants in existence and our dryers are operating in all parts of the world. Write for list of installations and catalogue S. C.

**American Process Company**  
68 William Street, NEW YORK CITY

## Buy Lime Kilns for the Future as Well as for the Present

Good judgment and efficient management consist in buying equipment for future contingencies as well as for present needs. Temporary economy (buying "cheap") is false economy. The most money is made by purchasing permanently profitable equipment.

Doherty Lime Kilns will make more lime and better lime at less cost than any others - now.

And they have the quality of materials and construction which guarantees an indefinite continuance of this high-duty performance.

Capital invested in Doherty Kilns represents a long-time investment with steady dividends.

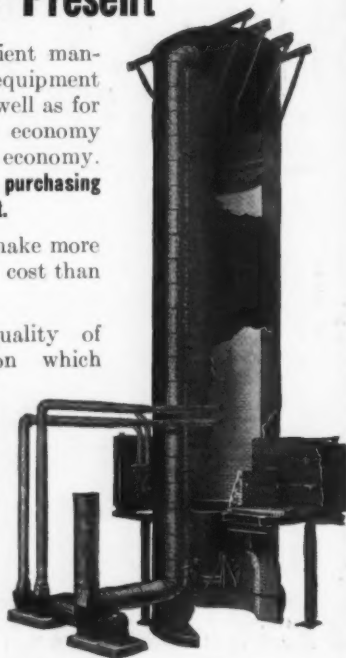
Bulletin No. 4 Is a Text  
Book on Lime-Making Economy.

**Improved Equipment Co.**

Combustion Engineers  
Executive and Sales Offices

60 WALL STREET

NEW YORK



## MEDUSA WATERPROOFED WHITE PORTLAND CEMENT

TO THE EXTENT OF OVER 5,000 BARRELS IS BEING USED IN THE NEW WOOLWORTH BUILDING, NEW YORK CITY, THE HIGHEST BUILDING IN THE WORLD, HERE ILLUSTRATED

**The First True White Portland Cement Ever Manufactured**

PERFECTLY WHITE IN COLOR AND STAINLESS

THE BRAND THE U. S. GOVERNMENT HAS USED  
IN FIFTY BUILDINGS IN THE PAST TWO YEARS

FOR EXTERIOR AS WELL AS INTERIOR WORK

Write for free booklets and samples of

**MEDUSA WHITE PORTLAND CEMENT**

**MEDUSA WATERPROOFING**

**MEDUSA WATERPROOFED CEMENTS**  
(GRAY AND WHITE)

**SANDUSKY PORTLAND CEMENT CO.**  
SANDUSKY, OHIO



## THE CUMMER DRYERS

For Mechanically Drying Everything.

The F. D. Cummer & Son Co., Cleveland, O.



## WORRELL'S ROTARY DRIERS

FOR SAND, CLAY, ROCK PRODUCTS AND OTHER  
GRANULAR MATERIALS.

Excellent Results Moderate in Cost and Expense of Operation

In sending for prices and printed matter describe your material fully, giving its percentage of moisture, required hourly capacity, etc.

**S.E. WORRELL**  
HANNIBAL, MO.

(First Manufacturer of Rotary Fire Drying Machines in the U. S.)

## Our Information Bureau Is Free

to all our readers.

**Consult Us When in Doubt**

Write us today.

**Information Bureau** ROCK PRODUCTS,  
537 S. Dearborn St. Chicago

Tell 'em you saw it in ROCK PRODUCTS



# ROCK PRODUCTS

ESTABLISHED IN LOUISVILLE, KY., 1902.

DEVOTED TO CONCRETE AND MANUFACTURED BUILDING MATERIALS.

Volume XI.

CHICAGO, APRIL 22, 1912.

Number 10

Publication day, 22nd of each month.

## THE FRANCIS PUBLISHING COMPANY

EDGAR H. DEFEBAGH, Prest.

Seventh Floor, Ellsworth Bldg., 537 South Dearborn St., Chicago, Ill., U. S. A.

Telephone Harrison 8086, 8087 and 8088.

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CHARLES D. WARNER,

F. R. VAN HAMM

Communications on subjects of interest to any branch of the industry are solicited and will be paid for if available.

Every reader is invited to make the office of Rock Products his headquarters while in Chicago. Editorial and advertising copy should reach this office at least five days preceding publication date.

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In the United States and Possessions and Mexico.....\$1.00

In the Dominion of Canada and all Countries in the Postal Union.....1.50

Subscriptions are payable in advance, and in default of written orders to the contrary, are continued at our option.

Advertising rates furnished on application.

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Cooperation between the crushed stone men and the binder manufacturers should prove a good thing for both.

Building operations have begun on a more extensive scale this year than last despite the fact that it is a presidential year. It is about time we exploded the old time theory that business has to be bad during one of these periods.

Sand and gravel operators are anticipating a very busy season. There has been more money spent in improvements than ever before, which would indicate that the producer has more confidence in the situation than formerly.

Our Information Bureau has proven of real value to many of our readers and our only regret is that more of them do not take advantage of it. We gladly furnish information on any phase of the industry free. There were over one thousand inquiries handled last month.

The good roads movement is spreading like wildfire and now that national, state, county and city authorities are aroused, there is no doubt that something will be accomplished. Of course the people after all have to foot the bill, no matter who authorizes the expenditure and the next move is to educate the masses. This should be a comparatively easy matter, as they can easily see the necessity for good roads in every locality.

Accident prevention is humane besides being practical business economy. The article in this issue illustrates in detail the methods employed by one of the largest cement companies in this country. The decrease in the number of accidents proves beyond a shadow of a doubt that the results are satisfactory. Every manufacturer should read this article carefully and apply it at once.

The first few bright spring days have caused the whole building world to awaken. In every city in this broad land of ours the sound of the workmen can be heard. From every quarter comes the glad news of the general resumption of construction work of all kinds. There is going to be more building than ever this season, despite the fact that it is a presidential year. Prices could be better, and no doubt they will be better as the season advances. Investors seem to know that now is the time to build, with the accent on the *now*.

The meeting of the business associations to be held in Washington on April 22, for the purpose of forming a National Association of Commercial Associations, is an important one to every business man and concern. Every association in the industry should be represented, as there will be a double incentive; first, the perpetuation of a Bureau of Manufacturers which seems to be under the ban of the State department which will be the means of guiding more commercial appointments abroad for the enlargement of our export business. Second, it will consolidate the business associations of this country so that they can be represented at Washington on legislation that is inimical to the general interests of the business world. While most of our communities and our industries are loaded up with organizations (in fact one manufacturer says it is practically making the American people association mad), yet we are busy people and the association will not stand by its own weight if the right kind of genius does not control. It will go to pieces. There certainly is need of a National Association that will help guide the departments in Washington where business is concerned and thus secure legislation that at least is not unfair. Delegates will be sent from one or two associations.

The concrete roadway is not new, but its general recognition is somewhat recent. Concrete paving has been employed more or less for a number of years very successfully and examples can be found in many parts of the country. Improvements have been made in the methods and application of the same, but the principle is identical. Rock Products made the prediction several years ago that the time would come when fully fifty per cent of all the roads in the country would be constructed of concrete and we have no reason now to change that statement. The recognition of concrete in this connection has been somewhat tardy, but we believe it was largely because cement manufacturers and others interested in the use of cement were devoting their attention and time to the development of the industry along other lines. Now they have come back to the concrete pavement for the very potent reason that it offers the cement manufacturer the largest outlet for his material yet presented.

The fearful loss of life incident to the sinking of the Titanic once more emphasizes that in the mad rush for speed, luxury and comfort we are prone to overlook the most essential need, that of real protection in the event of just such a catastrophe as actually occurred. We are all too ready to take a gambler's chance and trust to luck. It takes such national calamities to wake the civic and national conscience. No doubt for every life lost there will be a hundred saved in the future by the extra precautions which will be the result of this sacrifice. It takes such horrors as the Iroquois fire, the burning of the General Slocum, the Collingwood school fire and other national disasters to bring about reforms. One of the frailties of human kind is that we are all inclined to take chances. We can see this around us every day in innumerable ways.

The lines of trade, both in manufacturing and selling are inclined to be disturbed more or less by the political situation. We are apt to lose sight of the main idea of business in the heat and discussion of candidates and political issues. Every four years business has to be disturbed by these conditions. There is no question that this is absolutely unnecessary and the great interests represented by this publication may well feel that they can go along in the even tenor of their way undismayed by the shouts of demagogues and do business on the same basis as in ordinary years, for we all know that whoever is elected to this or that office, the country is going to exist just the same and we are going to do business just the same.



## EDITORIAL CHAT

A prominent building supply man made the following remark a few days ago: "Why wouldn't it be possible next year for one great Cement Show to be held coincident with the annual meetings of the National Builders' Supply Association, the National Lime Manufacturers' Association and the National Association of Cement Users. It would entail less expense, both for the exhibitors at the show and those interested, who desire to attend all these events. If they were all held together under the name possibly of a congress of building material men, everybody could attend all of them at the price of one." This remark has been called to our attention and a casual thought given the matter would indicate that there is much in the suggestion. There are a very large number of corporations, firms and individuals and laymen who desire to attend all these events, but when they are held separately and in different cities, the expense involved is too great to allow attendance on all of them. The purpose of the Cement Products Exhibition Company, of course, is to give the widest possible educational advertising to cement and for that purpose this year the shows were held in three cities and with excellent results. The suggestion that has been made undoubtedly will be given full consideration by the Cement Products Exhibition Company, as it has always since its organization acted in co-operation with these other organizations.

Did it ever occur to you that the advertisements in your trade publication are fully as interesting as the editorial matter? By reading the advertisements you keep informed of the new things in your line, because the live advertiser, encouraged by us, is frequently changing his advertisement and telling in simple language the story of the new things he has that will interest you. The advertisements in this publication are the pulse of your industry. Of course, we want you to read the editorial matter, but do not overlook the advertising pages.

### APPOINTED CHIEF ENGINEER.

M. A. Kendall has recently been appointed chief engineer of the Stephens-Adamson Mfg. Co., of Aurora, Ill. Mr. Kendall is an engineer of exceptional ability and under his direction the machinery will continue to be manufactured with the same high standards of quality and workmanship.

Mr. Kendall graduated from the University of Illinois in mechanical engineering, after which he became associated with the Stephens-Adamson Mfg. Co. as a member of their engineering department. He was later appointed chief draftsman, in which capacity he has served the company for a number



M. A. KENDALL, CHIEF ENGINEER STEPHENS-ADAMSON MFG. COMPANY, AURORA, ILL.



W. R. OGLESBY, CHARLES WARNER COMPANY.

of years, and there thoroughly demonstrated his ability as an engineer. His present position is one for which he is well prepared and in which he can well serve the company.

There is associated with Mr. Kendall a corps of trained engineers, who have specialized in the problems of handling and screening material, and through this department the customers are ably served.

W. B. Lazear, who succeeds Mr. Kendall as chief draftsman, is also a graduate of the University of Illinois in mechanical engineering. Mr. Lazear has been an important member of the engineering department for several years and these appointments thus greatly strengthen the engineering force.

### W. R. OGLESBY JOINS STAFF OF EXPERTS.

It is with no small degree of pleasure that we introduce to the readers of ROCK PRODUCTS W. R. Oglesby, who, as a member of the staff of experts of the Charles Warner Company, Wilmington, Del., will be frequently called upon to give advice to our readers.

Mr. Oglesby, though still a young man, has added to his technical education fourteen years of wide experience in solving the problems that confront the users of mason builders' supplies. The first two years of these fourteen were devoted to analytical chemistry with Messrs. Lathbury and Spackman, engineers and chemists for the lime and cement industry. Then followed four years of experience in the chemical control and operation of cement plants in the middle West, after which he returned to Philadelphia and took charge of the chemical and physical laboratories of the Henry S. Spackman Engineering Company, devoting most of his time to research work in lime and cement, and particularly to "Alca" and "Alca" lines. After this he took up plant operation, being general superintendent of a plant in Mexico designed and built by the Spackman Engineering Company.

During the past year Mr. Oglesby has been doing investigation work in conjunction with Henry S. Spackman, devoting most of his time to methods of firing, especially to the operation of gas producers.

Fred A. Peekham and Fred R. Kanengeiser, of the Bessemer Limestone Co., Youngstown, Ohio, collided with ROCK PRODUCTS just at the pressroom door. There was not an iceberg in sight and no disasters reported by wireless or otherwise.

### KENT MILL COMPANY MOVES OFFICE.

The Kent Mill Company, well known to our readers as the manufacturers of the Maxecon pulverizer, and who have long been located at 170 Broadway, New York City, have recently moved their main office to No. 10 Rapelyea street, borough of Brooklyn, New York City. This is only ten minutes from the foot of Broadway by the Hamilton ferry. The reason for this change is to enable them to keep their main office in closer touch with their plant, which has always been located at this address. It will enable them to step from their office into the shop with customers and show their machines in course of construction and assembling and to better explain them than has otherwise been possible.

## History Makers of the Building Material Industry

The subject of this sketch is one of our rising young business men and indicates that gray hairs are not always essential to success. Howard B. Arnold is one of the youngest men to achieve the distinction of becoming president of the Ohio Builders' Supply Association. He was given this high honor because of his prominence in the industry, and his especial fitness for the position.

As the president and general manager of the Dayton Builders' Supply Company, of Dayton, Ohio, he has made a distinct success. Mr. Arnold is but twenty-nine years of age, having first seen the light of day on the twenty-first of May, in 1883. He secured his early education in the public schools of Dayton, and was graduated from the High School in 1901. His first employment was with an electrical railway company, with which company he did a little of everything, serving in the capacity of freight agent, ticket agent, dispatcher and auditor. With the experience gained with this company, he embarked with a new electric light company and sold contracts for lighting before this company had secured their franchise.

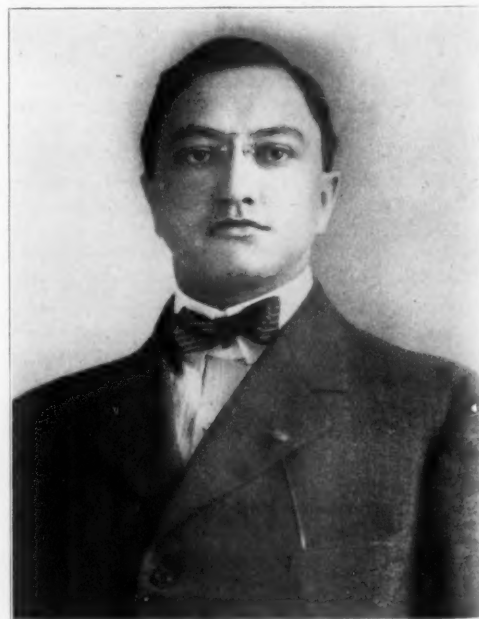
It was not until March, 1906, that Mr. Arnold decided to engage in business for himself, although he had long had the desire. With J. E. Lowes, a young man about the same age, and a very close friend, they purchased a wall plaster business and operated this company for over a year under the name of the Rice Wall Plaster Company. Since this time they have gradually built up the business until now they have one of the largest supply businesses in the city of Dayton.

There is no question but what the affairs of the Ohio Builders' Supply Association, under the able guidance and direction of Mr. Arnold, will continue to thrive and prosper. This association is not only one of the largest but one of the liveliest bodies of retailers in this country today. They have the faculty of doing things, and with Mr. Arnold at their head there is no question but what they will continue to be a recognized power in the building material world.

The Ohio State Stone Club met at the Boody House, Toledo, last month at the request of Jesse Taylor, secretary of the Ohio Good Roads Federation. It was decided to cooperate with the good roads federation in every manner possible as the interests of both are common. Another meeting of the Ohio State Stone Club will be held soon.

### WILLIAM H. K. BENNEWITZ RESIGNS.

William H. K. Bennewitz has resigned his position as sales manager of the McCormick Waterproof Portland Cement Company, St. Louis, Mo., effective April 10, and has accepted a position with the Edgar Allen American Manganese Steel Company, of Chicago, Ill., manufacturers of man-



WM. H. K. BENNEWITZ, WITH EDGAR ALLEN MANGANESE STEEL COMPANY, CHICAGO.

ganese steel castings. Mr. Bennewitz, although a young man, has had a wide business experience, and through his former connections has formed a long list of friends in the territory he will cover, which is the Southwest, including the states of Nebraska, Iowa, Kansas, Missouri, Oklahoma, Texas, Louisiana and Arkansas. His headquarters will be in Kansas City, Mo.

Mr. Bennewitz was formerly connected in the manufacturing end of the Iola Portland Cement Company, Iola, Kans.; Kosmos Portland Cement Company, Kosmosdale, Ky., and the Freeborn Engineering & Construction Company, Kansas City, Mo., prior to his connection with the McCormick Waterproof Portland Cement Co. He is a live wire and is liked by all who have business dealings with him. ROCK PRODUCTS joins the host of friends of Mr. Bennewitz in wishing him success in his new connection and bespeaks for him the continued patronage of all the customers of the Edgar Allen Manganese Steel Company in the territory he will represent.

#### AUTO MAKERS, ROAD BUILDERS AND GOVERNMENT.

The Executive Committee of the combined interests, the automobile people, the road builders and the Office of Public Roads met in New York April 16th at the Hotel Belmont to arrange for an itinerary intended to select a permanent location for an annual exhibit. The committee consists of the following: Lyte of the National Automobile Association, Lyon, representing road builders and quarrymen, and Logan Waller Page, of the Office of Public Roads. The selection of a location best suited to further the good roads propaganda involves visiting a number of the more metropolitan cities like Chicago, St. Louis, Kansas City, Denver, San Francisco, in the West, and perhaps some of the Eastern cities. The annual exhibit will be under the auspices of the combined interests and will be a combination show of vehicles, road material, and completed and partly completed roads, and the processes developed in experiment, and many photographic illustrations. Speaking in the interests of the West, and taking Chicago as an important center in the matter of supply and of raw material and manufactured product, ROCK PRODUCTS can properly venture the suggestion that its home city has pre-eminent claims. It is more nearly the center of the automobile and motor trade, is the headquarters of many of the great producers of road material, and is the most important factor in encouragement of the efforts of Professor Page. It places the exhibit, if given in Chicago, within reach of more people interested in the information to be gained and who are quick to put in practice practical things. So all in all why go beyond Chicago?

A. B. Meyer & Co., of Indianapolis, Ind., will give a dinner to their numerous employees and salesmen Tuesday evening, April 23rd at the Columbia Club. This is the thirty-fifth anniversary of this well known and popular concern and they are to be congratulated upon their long, honorable and successful career. On the invitation which was sent out appears the following 1912 "slogan":

"Hail to the man that delivers the Goods; this to all that are on the staff of A. B. Meyer & Co., it matters not in what capacity; whether on the credits, collects, books, counter, street, rail, machine or behind the scale, all are salesmen, the good of one is the good of all and all for one turns the wheels. Let all boost and show that each and all have a few customers they can feel are dealing with the firm owing to his connection, and make the anniversary year the 'hammer.'"

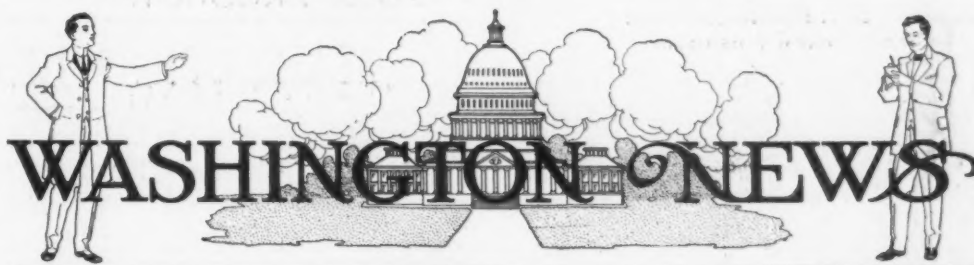
Arthur W. Eisenmayer, Jr., of the Granite City Lime & Cement Co., Granite City, Ill., was in the city a short while the early part of last week.

G. W. Bunker, of the G. W. Bunker Co., of Grand Rapids, Mich., was a Chicago visitor recently. Says the outlook for spring trade in the sand and gravel business in his locality was never better.

Hugh McDonald has severed his connection with the Charles Warner Company and opened an office at 103 Park avenue, New York City, an eastern representative of the Plastico Non-Staining Cement Co. Mr. McDonald is well known to the trade.

#### O—WHAT A TALE!

Once there was a merchant who lost—  
His temper.  
The good will of the customer.  
The immediate sale.  
The future business of that customer and his friends.  
And gained—  
Zenith.



WM. B. BARR, WM. WOLFF SMITH, E. H. PULLMAN  
Contributing Editors  
722-723 Southern Building, Washington, D. C.

#### OUR WASHINGTON BUREAU.

The National Government is in such close contact with every line of business that a reliable source of information located at the Capital is everywhere regarded as invaluable. ROCK PRODUCTS maintains at Washington a fully equipped and highly efficient news and information bureau located in the heart of the business and financial district and convenient to the government departments. Our patrons who may wish to be privately informed will find our Washington Bureau prepared to serve them promptly and efficiently by mail or wire. Charges are consistent with the character of the service.

The field covered includes: Congress, the U. S. Supreme Court, Court of Commerce and other courts; the Interstate Commerce Commission and other commissions, and all Government Departments with their various bureaus and branches.

Our patrons are invited to make our bureau their headquarters while in Washington and avail themselves of our facilities.

Inquiries may be addressed to ROCK PRODUCTS, or to its Washington Bureau, Rooms 722-723 Southern Building, Washington, D. C.

Washington, D. C., March 20.—The Secretary of the Interior has directed the Reclamation Service to execute contracts for furnishing crushing and pulverizing machinery for use in the preparation of sand and cement for the construction of the Arrow-rock dam, Boise irrigation project, Idaho, as follows:

Items 1, 1a, 2 and 2a, to the Allis-Chalmers Company, Milwaukee, Wisconsin. Items 1 and 1a consist of ball mills, the contract price being \$3,345 with freight to Boise, Idaho \$348.04, making the total cost to the United States delivered at Boise \$3,693.04. Item 2 consists of three tube mills, contract price \$7,964.91. Item 2a covers an option on one additional mill which may be purchased on or before January 1, 1913, at a cost of \$2,200.

Item 5 to the United Iron Works of Spokane, Washington, for one rotary dryer at a contract price of \$1,260 f. o. b. factory with additional freight; the total cost to the United States being \$1,483.30.

An argument was held in Washington, D. C., on April 4th, before the Interstate Commerce Commission, in the case of the Ash Grove Lime & Portland Cement Company et al.

A hearing will be held on April 18, 1912, at Chattanooga, Tenn., before Special Examiner Gibson, of the Interstate Commerce Commission, on cases 4445, 4644, and 4645, all between the Gager Lime & Manufacturing Company vs. N. C. & St. L. Railway Company et al.

A hearing was held at Kansas City, Mo., on March 16th before Special Examiner Mackley of the Interstate Commerce Commission. The case was I. & S. No. 68 in the matter of advances in rates in the transportation of cement in carload lots from Kansas producing points to points in Nebraska, Wyoming, Oklahoma, Colorado and Missouri.

A hearing will be held on May 9th in New York City before Special Examiner Henderson, of the Interstate Commerce Commission, in case No. 4732, in that of the Barber Asphalt Paving Company vs. The Lehigh Valley Railroad Company et al. The hearing of case No. 4579, of the Waukesha Lime & Stone Company vs. the C. M. & St. Paul Railway Company et al. has been set for May 23rd in Milwaukee, Wis., before Special Examiner Henderson of the Interstate Commerce Commission.

The contest between consumers and trunk line railroads west of the Mississippi River over freight rates on cement has been postponed again by the Interstate Commerce Commission until September 30, the extreme limit of time which the Commission can keep an announced rate in suspension. Last fall the railroads in the West announced increases in carload cement rates averaging about 15 per cent higher than the old rates. On November 20 the Commission held up advances until March 30 and now extends the time to September 30.

In his annual report Secretary of Interior Fisher gives the following summary of results of reclamation work from June 30, 1902 to June 30, 1911:

Material excavated, cub yards.....	77,148,712
Class 1, cubic yards.....	67,658,616
Class 2, cubic yards.....	5,136,331
Class 3, cubic yards.....	4,353,765
Volume of storage dams, cubic yards....	7,192,787
Volume of dikes, cubic yards.....	3,338,532
Available reservoir capacity, acre feet....	4,747,770
Number of tunnels.....	68
Aggregate length of tunnels, feet.....	101,365
Canals carrying less than 50 second-feet miles.....	4,341
Canals carrying from 50 to 300 second-feet, miles.....	942
Canals carrying from 300 to 800 second-feet, miles.....	387
Canals carrying more than 800 second-feet, miles.....	291
Canal structures costing less than \$500..	22,226
Canal structures costing from \$500 to \$2,000.....	847
Canal structures costing over \$2,000....	529
Number of bridges.....	2,223
Aggregate length of bridges, feet.....	47,310
Riprap, cubic yards.....	336,056
Paving, square yards.....	344,891
Cement used, barrels.....	1,245,827
Concrete, cubic yards.....	1,066,310
Roads, miles.....	570
Telephone lines, miles.....	1,694
Telephones in use.....	724
Buildings erected.....	548
Offices.....	65
Residences.....	258
Barns and storehouses.....	225
Area of lands for which water can be supplied, acres.....	1,025,609
Acreage included in projects now under way.....	3,101,450

No. 7835. Concrete-block machines.—A report from an American consular officer in the Near East states that there is an excellent opening in his district for the sale of concrete-block machines, and he hopes that some American firm will be enterprising enough to take up the proposition. Requests have been received from architects and contractors, who are in the market for several machines, for particulars regarding American firms manufacturing such equipment. A company has also been formed in his district for the installation of an hydraulic lime mill. The president of the company, who is an engineer, is anxious to get in touch with an American firm that can supply the necessary installation, as well as all the machines required for the manufacture of hydraulic lime. Estimates and plans are desired.—From U. S. Consular Reports.

The hearing in the express investigation, heretofore set for March 25, 1912, has been postponed to a date to be hereafter announced. This postponement is caused by the fact that neither the Commission nor the express companies have yet been able to secure certain figures, which are desired for a consideration of the case.

#### SAVING THE BY-PRODUCT.

Among the many developments of the Office of Public Roads of the Agricultural Department in direct charge of Professor Logan Waller Page the question of making practical use of large quantities of refuse is given close attention, and nearly every day or week some new discovery is made. This is true of what is known as black strap molasses for a long time thought worthless, and because of being more or less a waste of a vicious character generally having to be burned up. It has been found, however, that it makes an excellent road dressing for concrete and cement roads and has come into service in some instances commanding a price of 12 cents per gallon, at least this information is given us by an authoritative source.



**H. J. BROWN RESIGNS.**

The United States Gypsum Co., have lost through resignation the service of H. J. Brown, assistant manager of operation. Mr. Brown has been with the U. S. G. Co. for the past nine years, beginning as a clerk in the operating department and advancing successively through the positions of assistant purchasing agent, superintendent, Grandville, Mich., Gypsum, O., and division superintendent at Oakfield, at which latter point he spent three years before being, in January, 1910, made assistant manager of operation, with headquarters in Chicago. During this year Mr. Brown had charge of the U. S. G. Co.'s main laboratory in Chicago, and all the plants manufacturing fireproof plaster block and plaster board as well as the company's retarder mill.

The destruction by fire of the company's Alabaster mill in October, 1910, made a readjustment of the engineering and operating departments necessary in order that the extra work of finishing their new mill at Fort Dodge and the simultaneous construction of a new mill at Alabaster and the six kettle steel mills at Oakfield, N. Y. So Mr. Brown returned to Oakfield to build the new mill and manage the company's other mills and mines. At the time of his resignation Mr. Brown had managed the U. S. G. Co.'s properties at Oakfield, N. Y., for a total period of something over five years.

It is understood that Mr. Brown contemplates going into business for himself.

Have you thought about installing a cost system? Think again. It will save you money.

One of the best methods for keeping in touch with your trade is to read the advertising pages. There you will discover something about the new things in your line.

The man who sits with his feet upon the desk waiting for business to come to him is like the girl on the milk stool in the middle of the field—the cow never comes to her.

Charles E. Bishop, secretary of the Marblehead Lime Company of Chicago, who has been on an extensive trip throughout Mexico and the southwest occupying three months' time, is back again at his desk looking much better after his vacation.

**SPARKS FROM THE FIRE WASTE...**

The fire waste of the country is excessive and is sapping its prosperity. Reduction of the fire waste is an important part of the campaign for the conservation of the national resources.

Fire losses in the United States and Canada in 1911 were \$234,337,250, most of them due to carelessness.

Fire losses in January of 1912 were a million dollars a day, 50 per cent more than for the same month last year.

Fire losses and the cost of fire prevention in the United States amount to \$450,000,000, or more than the total American production of gold, silver, copper and petroleum in a year.

The cost of fires each year is one-half the cost of all the new buildings erected in a year.

The annual per capita fire waste in the United States is \$2.51, in Europe 33 cents. Cause: The latter has better construction, less carelessness, increased responsibility.

If buildings in the United States were as fire-proof as in Europe, the annual cost of fire losses and protection would be only \$90,000,000.

New York city spends \$10,000,000 a year for fire extinguishment and \$15,000 a year for fire prevention.

Of 4,234 known causes of fire in Chicago last year, 1,121 were due to the careless use of matches. Nearly ten thousand matches are scratched every second of the day in this country, every one a possible fire.

Over five thousand are killed and 50,000 are injured annually as a result of fire.

The proportion of insurance capital to insurance liabilities is very much on the decrease. In the past forty years the liabilities have almost doubled, while only \$5,000,000 more capital was invested in the business in 1911 than in 1870.

**TO KEEP MACHINERY CLEAN.**

It is stated that the following preparation will keep machinery clean for months under ordinary circumstances, as, for instance, in a showroom: One ounce of camphor, dissolve it in one pound of melted lard and add enough plumbago powder to make the mixture the color of iron. Clean the machinery and smear it with the mixture. After it has stood for twenty-four hours rub the work clean with a soft linen cloth.

**MARKETING LEATHER BELTING**

Address Given Before the Chicago Advertising Association By F. A. Mitchell,  
Advertising Manager Chicago Belting Company.

The perfection of any useful thing is seldom the result of chance. The many public utilities which have grown common to us through constant use represent years of hard labor and struggle for those who have brought them to perfection. This is true through all industrial life and the manufacturing firm that is today producing a product approaching perfection has behind it many years of experiment, tests and hard work.

We are to discuss the problem of marketing leather belting to day and in order to approach the subject understandingly a few introductory remarks relative to the construction of belting are quite necessary.

The leather belting manufacturer secures the belting hide, or butt, as it is commonly called, direct from the tanners. Tanning leather for belting purposes is a very slow process, as this leather must be tanned with pure oak bark without the use of chemicals in any form and the leather is left about six months in the tanning liquor. Only the hides of native steers are used for the best belting.

The butt is first thoroughly secured, set and fleshed, and the shoulder cut off, 47 inches from the root of the tail. It is then curried, a process which consists of putting back the natural animal oils into the leather which the tanning and scouring processes have removed.

Now, we stretch the leather, a rather delicate process, for if overstretched, the fibers will be strained, and if understretched the leather will stretch when made into belting. An operation requiring intelligent supervision, obviously.

The butt is first thoroughly scoured, set and fleshed, various widths to be made, and these sectional pieces are scarfed on each end, and joined together with cement under hydraulic pressure.

It is most interesting to note that in first grade belting the only part of the whole hide that can be used is the center of the back, a section 30 inches wide; that is, 15 inches on each side of the backbone, and 47 inches long.

I have given a hurried picture of the process of leather belt construction—just enough to give a slight idea of what belting is. The use of leather as a power transmission medium has never been equaled by any other method and no substitute has ever been found that can compete successfully with leather. It possesses qualities inherent in the leather itself which no substitute has, and it is one of the very toughest substances known. A familiar illustration of this lies in the fact that the nails with which the soles of a pair of shoes are studded will wear faster than the leather itself.

Now, in regard to placing leather belting on the market. I desire to speak impersonally and the question to my mind which is to be discussed, is a question of efficiency alone, for it must be remembered that all belting manufacturers work with the same base. I mean by this that they purchase their belting butts largely from the same tanneries. You see, therefore, that at the beginning all manufacturers have an equal chance in producing the best article. How is it possible therefore for one manufacturer to produce a better belt than his competitors? As I have just said, it is a question of efficiency, and I would divide this into Factory Efficiency and Selling Service.

As the belting butt, starting from the basement, takes its way through the factory, it passes through many processes, goes through many machines and is handled by many men before it finally reaches the finished roll. Assuming that every manufacturer purchases machines of equal efficiency, the question of superiority is brought down to the human factor.

There are two methods of employing workmen in a belt shop. One is to employ a certain number of intelligent foremen and for all other work use common labor. The other method is to have fewer factory hands, one general superintendent working over a smaller number of foremen, and employing workmen of a higher order of intelligence, men who are trained and skilled in their line. The latter method appeals to me as the logical one to use.

In the producing of belting there is no one thing alone that makes perfection, but the constant and intelligent care that is given each one of the many small processes that foot up the total of perfection. To illustrate this: One factory may arrange their presses and machinery in a certain manner so that the leather is moved about the plant with the least possible loss of time and energy; a seemingly minor detail, and yet one that is first investigated by any efficiency expert. We find, too, in one factory the pressmen join the sectional pieces of leather together in the belt carefully and accurately, whereas in another plant the work is carried on in a listless and haphazard way apparently without intelligent supervision or manual skill. All through the plant such comparisons can be made.

The shipping department as a valuable adjunct to the sales force is not universally recognized. Yet here we find the opportunity of presenting our final argument for quality, and I leave it to your judgment, if the argument is not convincing.

Suppose a roll of belting is shipped to a customer—a trial order say. He looks at the burlapped roll as it comes into his receiving room, and first notices that the burlap is a particularly durable quality, and tightly sewed around the roll. When this is ripped off, he sees that under the burlap is strong corrugated board as a safeguard, while the belting is wrapped in strong, heavy wrapping paper. After this is removed, the roll stands before him, and his wonder increases as he notes that the roll itself is bound by leather straps about  $\frac{1}{4}$ " wide, one on each edge, so that it can be rolled over the floor without the belt itself being injured or soiled.

By the inductive method this merchant reasons that the belting itself must have been made throughout correctly and well, when such careful attention is given to the final work of preparing it for shipment. And he is right. It stands to reason that any firm that pays close attention to one minor detail, has a vigilant eye to others perhaps of themselves unimportant, but collectively, the sum total of perfection.

Taking up the question of selling service, we must discuss the duties of the advertising department and sales

department. There should be absolute co-operation between these two because when all is said and done they are practically one. Here the personnel of the two departments can either make or break the business. The duties of the advertising department are to secure pointers and inquiries and pave the way for the work of the sales, and its efficiency depends to a large extent on the methods employed. Its work is largely constructive.

To my mind there is no argument when it comes to the question of using trade paper space in advertising a commodity like leather belting. The important thing is to choose the proper publication for the very reason that there are so many papers covering various industries and their circulation overlap to such an extent that it is almost impossible to tell with any certainty which is the leading paper in a given field.

It must not be inferred that I am in favor of placing all of the advertising appropriation in trade papers, because I believe that the proper distribution of this expenditure should be made to cover publicity in the trade paper, mailing folders and follow-up correspondence, and that they are all three of such importance and so related to each other that any one of them should not be neglected. It has often been argued that it cannot be demonstrated that an advertisement in a trade paper can be expected to pay for itself in dollars and cents. I take issue with this because I have proved that it can.

I admit, however, that there are several publications where it may be advisable to carry an advertisement without the feeling that the actual orders will cover its cost. There is a very peculiar idea existing in the minds of a great many advertisers to the effect that they must advertise in the trade papers, not because they will receive any good results, but because their competitors are doing so, and that in their opinion the editors are a "bunch of grafters" and can do them a lot of harm if they do not advertise. Within the past two weeks I have had this idea presented to me by a very large advertiser in a certain field and am very glad I can say that I know from my own experience that there are absolutely no grounds for such an impression. There are unquestionably a great many trade papers that are carried on strictly as an advertising proposition without any regard whatever for the reading matter, but if the advertiser wishes to use such a publication I do not see why it is not his own fault if he does so, as he has the same opportunity to investigate the paper as he has to investigate the purchase of anything else.

Mailing folders have their place and I would give them the same consideration as advertising in trade papers. They have the advantage in that they are a little more personal, and while they may go to the same man who reads the advertisements, it is a very simple matter to enclose a postal card with the folder and make the work of replying easy, whereas the reading of an advertisement may produce interest, but often only in a passive way.

The follow-up is the third aid in the general system of selling service. It is the result of trade paper advertising and the mailing folder. These two make the follow-up system. It is out of the question to discuss follow-up systems at any length. The main requisite of a perfect system is that it be as nearly automatic as possible.

From this discussion we find that our trade advertising, mailing folders and follow-up are but an adjunct of the sales department, and the sales department must be kept in close touch at all times with every inquiry and with the result of returns from the follow-up system. Where there is perfect intercommunication between these two departments there are bound to be results. We may have built up a rather complicated system but it must work out simply and easily and be a system that will follow with thoroughness every prospect from the time a pointer is received to the time the order is either won or lost. When all is said and done industry and patience are the two things that count.

Climbing the foothills to the mountain top is not the jumping from crag to crag, but the slow plodding along the rugged road that winds from the valley up the mountain side, mounting a little higher day by day, and the pinnacle is reached only by the persistent and tireless traveler.

The history of progress is the history of honest and patient labor. There is no other road to the industrial mountain top. Many have tried the crag route, and the record of their failures can be found in your morning paper 365 days of each year, and 366 of this.

Any business organization adhering to the principles of honesty, industry and patience, will eventually climb the heights and stand ever as an organization where quality reigns supreme.

The Peoria Street Railway Company, of Peoria, Ill., will use concrete ties in all repair work this summer.

S. E. Griffith, of Belvidere, Ill., will do considerable concrete silo building in northern Illinois this summer.

The Eberling Cement Tile Machine Company, of Cleveland, Ohio, has increased its capital stock from \$10,000 to \$25,000.

The Abrahams-Porter Construction Company, of Moline, Ill., has been awarded contract to pave Seventh street in East Moline, Ill., with brick for \$20,250.

The International Contract Company, of Seattle, Wash., was awarded contract for construction of 500-foot reinforced concrete bridge at Portland, Ore., for \$65,300, it is reported.





## NEW YORK INCORPORATIONS.

(By Corporation Trust Company.)

The James Duell Construction Company, of Tarrytown, N. Y., has been incorporated with a capital stock of \$30,000.00. The incorporators are James Duell, James C. Duell and William C. Duell, all of Tarrytown, N. Y.

The International Concrete Piling Company, of Jamestown, N. Y., has been incorporated to do a general contracting business with a capital stock of \$100,000.00. The incorporators are Frank G. Curtis, D. Allen Curtis, and Henry G. Rask, all of Jamestown, N. Y.

The Chatham Construction Company, of Manhattan, has been incorporated with a capital stock of \$10,000.00 to carry on building business. The incorporators are Jacob Friedman, Martin W. Hubbard, Jr., and Waldemar F. Timme, all of 1182 Broadway, New York City.

The Coffey Jorgenson Construction Company, of Huntington, L. I., N. Y., has been incorporated with a capital stock of \$15,000.00 to do a general contracting and construction business. The incorporators are John C. Coffey, John T. Jorgenson, and Lawrence Jorgenson, all of Huntington, L. I., N. Y.

The Northern Waterproofing Company, of Manhattan, has been incorporated to do a waterproofing business and build concrete buildings, with a capital stock of \$5,000.00. The incorporators are M. S. Goldberg, 800 East Fourteenth street, Brooklyn, N. Y.; Bernard Joachim, 591 Putnam avenue, Brooklyn, N. Y., and Michael Goldberg, 402 West One Hundred and Forty-eighth street, New York City.

The Vera Construction Company, of Brooklyn, N. Y., has been incorporated to do a building and real estate business with a capital of \$15,000.00. The incorporators are Albert Jaret, 1957 Eighty-fifth street, Brooklyn; Moore Engelhardt, 1600 Beverly road, Brooklyn, and Bernard S. Deutsch, 1800 Crotona avenue, Brooklyn.

The Brookhaven Lumber & Supply Co., of Patchogue, L. I., N. Y., has been incorporated to deal in building supplies, lumber, etc., with a capital stock of \$10,000.00. The incorporators are Ralph L. Kilby, 347 Fifth avenue, New York City; James G. Shaud, Patchogue, L. I., and Henry A. Tenney, 363 River avenue, Patchogue, L. I.

The Blight, Overfield Company, of Manhattan, has been incorporated to do a general building and contracting business with a capital stock of \$10,000.00. The incorporators are Orlando Blight, 225 Eleventh street, Brooklyn, N. Y.; Annie Blight, 225 Eleventh street, Brooklyn, N. Y., and John S. Overfield, 159 East Ninety-first street, New York City.

The Farber Contracting Company, of Manhattan, has been incorporated to carry on a mason contracting business, with a nominal capital stock of \$1,000.00. The incorporators are I. O. Farber, 706 Fairmount place, Bronx, New York City; Moses A. Lewis, 1361 Fifty-third street, Brooklyn, N. Y., and S. N. Freedman, of 260 Riverside drive, New York City.

The Jerome Construction Company, of New York City, has been incorporated to do a general contracting and construction business with a capital stock of \$2,000.00. The incorporators are C. Ferrara, 12 Walnut street, New Rochelle, N. Y.; R. Gendile, 304 East Twenty-fourth street, New York City, and Charles R. Ferrara, 12 Walnut street, New Rochelle, N. Y.

The Cement Tile & Construction Company, Manhattan, has been incorporated to manufacture cement tile and do concrete construction work, with a capital stock of \$1,000.00. The incorporators are H. Epstein, 440 Riverside drive, New York City; M. Gross, 1523 Washington avenue, Bronx, New York City; Michael Griffin, 514 West One Hundred and Thirty-third street, New York City.

The Onondaga Builders' Supply Company, of Tonawanda, Erie county, N. Y., has been incorporated to deal in builders' and contractors' supplies with a capital stock of \$10,000.00. The incorporators are John Ayrault, Miles Ayrault, and Alton G. Ensign, all of Tonawanda, N. Y.

The Fargo Contracting Company, of Manhattan, has been incorporated to carry on a general contracting business with a capital stock of \$5,000.00. The incorporators are Philip Leichentritt, 512 West One Hundred and Seventy-ninth street, New York City; Edward V. Sperb, 203 West Seventy-fourth street, and John M. Dierkes, 17 Battery place.

The Concrete Manufacturing Company, of Poughkeepsie, N. Y., has been incorporated to manufacture concrete products, etc., with a capital stock of \$2,000.00. The incorporators are John E. Wright, George W. Hilliker, and Charles M. Christian, all of Poughkeepsie, N. Y.

## NEW JERSEY INCORPORATIONS.

(By Corporation Trust Company.)

The Chase Lumber Company, of Wenonah, N. J., has been incorporated to deal in building materials, lumber, etc., at Mantua and West Jersey avenues. The incorporators are Wm. M. Chase, of Wenonah, N. J.; G. R. Bacon and Levin R. Bacon, of Laurel, Del.

The Centreville Building Company, 89 Andrews street, Bayonne, N. J., has been incorporated to carry on a building and contracting business with a capital stock of \$125,000. The incorporators are Daniel G. Bergen, Jersey City, N. J., and Morris Resnick and Wolf Resnick, of Bayonne, N. J.

The Middlesex Cements Products Company, of East Bound Brook, N. J., has been incorporated to manufacture artificial stone, brick, building materials, etc., with a capital stock of \$25,000.00. The incorporators are F. H. Bent, A. H. Bigelow, and William F. Vosseller, of Bound Brook, N. J.

## MASSACHUSETTS.

The Boston Building Material Company, of Boston, has been incorporated to deal in building material of all kinds with a capital stock of \$20,000.00. The incorporators are William Barrett, Patrick J. McCarthy, and Alan G. Lewis, all of Boston, Mass.; Attorney Alonzo E. Yont, 24 Milk street, Boston, Mass.

Brubaker & Stern, the well-known firm of architects, has prepared plans for twenty reinforced concrete houses to be built in Indianapolis for the Marion County Realty Company. The structures will be erected in the St. Andrews addition and the buildings are to be cottages and bungalows, six and seven rooms, with all modern conveniences.

The common council of Menasha, Wis., has awarded the contract for furnishing all the cement for the city during the present season to the Wolf Brothers Lumber & Fuel Company at \$1.12½ per barrel.

The Wells-Franklin Construction Company of Muskogee, Okla., has been incorporated with a capital stock of \$5,000. The incorporators are A. J. Wells, E. J. Franklin and S. T. Huckleberry, all of Muskogee.

The North Side Fuel & Supply Company, of Chicago, has been incorporated with a capital stock of \$2,500, to deal in, among other things, building materials. The incorporators are Ronald T. Leston, George A. Herrick, and Edmond Bingham, Jr.

The Robinson Clay Products Company, of Akron, O., have established a distributing depot at Buffalo, N. Y., located at 1148 Seneca street. It is an admirable location, with railroad facilities at hand and extensive improvements are being made in the shape of new buildings, etc. The Robinson company is one of the best known producers of tile, fire brick and earthenware.

Harris, McAdoo & Dodson, of Union City, Tenn., who are contractors and manufacturers of all kinds of concrete work and retailers of lime, cement and sand and gravel, are shortly going to install a concrete brick machine. They would also like to know where they can procure the cheapest and best reinforcement for fence posts. Their present output is 230 concrete blocks per day and 100 fence posts.

## WOOLWORTH BUILDING.

The Story of the Largest Building Ever Built Reads Like a Page From the Arabian Nights.

New York, N. Y., April 15.—The world's largest office structure, the Woolworth Building, now in course of erection on Broadway between Barclay street and Park Place will use enormous quantities of building materials. In fact, there is little doubt that more materials will be used in this building than in any structure so far erected on the American continent. It weighs 250,000,000 tons. It rests on sixty-nine pillars of cement reaching down to solid rock from the street level. These cement columns are encased in steel columns which themselves weigh 1,500 tons each.

This building, the tower light of which, 750 feet in the air, will be seen ninety-six miles out at sea, has in it 20,000 tons of structural steel. The biggest beams are 44 by 30 inches, though there are many girders and supporting piers riveted together.

Forty-five thousand dollars' worth of glass has already been ordered for windows and doors and skylights. In the walls and floors are to be over thirty thousand square feet of hollow tiling and terra cotta. The cement order will run into the tens of thousands of bags. On the weekly payroll is a regiment of men from mere lifting and carrying laborers to the circus performing iron-workers, who play around at 700 feet in the air on slender steel beams like orioles on an elm bough. Their wages run from \$1.50 a day for the laborers to \$4.50 up a day, and the payroll issues some \$5.00 a day into the money channels of people who need money mostly. This has been going on for two years.

The 30,000 square feet of land on which the building stands cost about \$4,500,000. It cost over \$1,000,000 to dig out the foundations and the basement and sub-basements. The cost of construction will be nearly \$9,000,000, making the whole pile an investment of approximately \$13,500,000. The mere knowledge that such a building was to be erected on the spot caused the tax assessments on the property to be raised from \$2,250,000 to \$3,200,000.

There will be a floor space, taking all the floors together, of twenty-three acres. There is to be room for about 2,000 offices, and it is figured that the daily population of the building will be 10,000 and the transient population about as many more.

Down in the depths for the lighting of this young city is an independent electric light plant capable of lighting 31,000 25-watt lamps. On the other hand, so far have systematization and modern inventions of cleaning advanced, the present plans for the inside force—the elevator men, engineers, watchmen, window cleaners and scrub women—will number less than one hundred and seventy-five men and women, who will receive an average wage of \$12.50 a week. The rent roll will approximate annually \$2,500,000 when the building is filled.

In comparison to other high buildings, the Woolworth Building is to be 50 feet higher than the Metropolitan Tower, 133 feet higher than the Singer Building and 245 feet higher than the Washington Monument. The only higher structure in the world is the Eiffel Tower in France, which is 985 feet high, but it is not a building.

The Central Material and Construction Company has changed its location from East St. Louis, Ill., to Chicago.

The McLaughlin Building Material Company, of Chicago, has increased its capital stock from \$100,000 to \$150,000.

The Granite Lime & Cement Company, of Granite City, Ill., was awarded a \$26,511 paving contract at Virden, Ill.

Weber & McHarry, San Jose, Ill., has been incorporated, to deal in building materials. Incorporators: Otto F. Weber, Charles A. McHarry and H. H. Stewart.

The Linn Construction Co., Middletown, Ohio, has been organized to deal in builders' supplies; capital stock, \$10,000. The organizers are E. E. Linn, William D. Elters, S. D. Donavan, Joseph Sweeney and Christel Dell Hall.

The Atlantic Concrete Storage & Builders' Supply Company, of Pleasantville, N. J., has been incorporated with a capital stock of \$25,000 to carry on a general construction business. The incorporators are J. N. Binder and J. W. Binder, of Atlantic City, and A. N. Kelley, of Pleasantville, N. J.

## NEW YORK RETAILERS.

New York, N. Y., April 16.—Business conditions in the local building material market have improved to a large extent during the past month.

The members of the Building Material Exchange of the city of New York held their thirty-first annual election for officers and trustees at the Exchange's rooms, 20 Vesey street, New York City, April 8, 1912, and elected the following officers: President, A. Wilfred Tuthill; vice-president, A. V. C. Genung, Jr.; treasurer, William C. Morton; trustees, A. Wilfred Tuthill, A. V. C. Genung, Jr., William C. Morton, Percy Murchie, George A. Molitor, William T. Roberts, Dennis Reardon, John W. Ruth, Elwood Weeks, Daniel J. Morrison, Thomas Cumming, Joseph C. Seguire, W. O. Fredenburg; inspectors of election, Walter C. Shultz, James E. Clonin and Orin F. Perry.

The report from the Manhattan Building Department for March shows a gain of \$8,818,820.00 in the cost of new buildings planned over the corresponding month of last year. The report shows that, although there were only 61 plans filed last month, their total cost aggregate \$16,326,325.00, while in March, 1911, 89 plans were filed at an estimated cost of \$7,507,505.00.

For the first quarter of 1912, 176 plans were filed for new buildings at an estimated cost of \$28,330,200.00, as compared with 173 plans in the first quarter of 1911, at an estimated cost of \$23,286,155.00. Plans for alterations filed in the same period numbered 718, at an estimated cost of \$2,737,295.00, as compared with 677 plans filed in the first three months of 1911, at an estimated cost of \$2,454,652.00.

E. B. Morse, of the Frank E. Morse Company, in speaking of the local conditions in the building materials trade, said: "The demand for building materials during the past month came along slowly, for as yet work has not been started in full swing. Business is bound to improve during the next month, however, dealers with whom I have spoken are of the opinion that conditions are much brighter than they were of a year ago. We expect a good demand for lime, cement, plaster and other materials to commence by the first of May."

Walter C. Shultz, of the Shultz & Son, Hoboken, N. J., in reviewing business conditions in Hudson county, New Jersey, stated: "Building operations have improved somewhat during the past month in Hudson county, and an improvement has been noted in building material supplies throughout this district. The amount of business which will be done in the spring promises to be of good proportions."

## PHILADELPHIA RETAILERS.

Philadelphia, April 18.—With Ralph D. Childrey, John K. Getty, William Wripford, Charles J. Harper, Alfred E. Usilton, Olmar J. Cox, Henry J. Mockett, Charles L. Stewart and Daniel H. Sharp as directors, the Camden Master Builders' Exchange filed articles of incorporation in the office of the county clerk March 21. The objects are for the protection and encouragement of the building interests in the city and county. Headquarters have been established in the Goff building, Camden, N. J.

Among the recent incorporations are:  
Wagler Concrete Company, Pittsburg. Capital, \$50,000. Retailer.  
Glen Gory Shale Brick Company, Reading, Pa. Capital, \$20,000.  
National Cement Products Company, Philadelphia. Capital, \$10,000.  
Lackawanna Construction Company, Scranton, Pa. Capital, \$50,000.  
Conewago Trap Rock Company, Williamsport, Pa. Capital, \$75,000.  
Dickmann Pairing Company, Philadelphia. Capital, \$40,000.  
Jackson Stone and Sand Company, Mercer, Pa. Capital, \$10,000.  
Ajax Engineering Company, Wilmington, Del. Capital, \$125,000.

## LOUISVILLE RETAILERS.

Louisville, Ky., April 20.—The building supply trade of Louisville and Kentucky has not found over-much to do during the past month, generally speaking. The reason for slack business with the retailers of the Gateway City is entirely natural, proceeding chiefly from backward business conditions in every line.

The Excelsior Paint Manufacturing Company has removed from Market-street headquarters to new and larger accommodations at 141 North Third Avenue in Louisville. The Excelsior company, which specializes in the manufacture of roofing paint, has been reorganized upon a broader basis with a capitalization of \$50,000. B. J. Weitzel is president of the concern.

"Everything is very quiet just at present, but I do not believe that there is really anything wrong with the season," said L. M. Rice, Jr., of the Central Paint & Roofing Company. "Perhaps the epidemic of spinal meningitis which has affected Louisville has gotten hold of a few of the building supply orders."

Charles H. Connor Company, well-known local roofing manufacturers, are one of the few Falls Cities concerns to report first-class business. The Connor factory was completely renovated last summer and has started the season of 1912 with every sign auspicious of a banner year.

The National Roofing & Supply Company is handling a standard amount of work, but specifies no unusual features of current business. The outlook for the well-known Main-street supply concern is pronounced to be uniformly promising. The reorganization of the company, necessitated by the death of its president a month or six weeks ago, has not yet been commenced.

The Hanna Paint Manufacturing Company, of Cleveland, O., specializing in a wide variety of household and roofing paints of quality, has opened a branch at Eighth and Market streets in Louisville. The local headquarters distribute through Kentucky, Tennessee and West Virginia, being under the supervision of the vice-president of the Hanna company, who has this territory under his special jurisdiction. George Vinson is office manager at the Market-street branch.

## PITTSBURGH RETAILERS.

Pittsburgh, Pa., April 20.—Pittsburgh retailers are feeling decidedly better than one year ago. The prospects are much improved. The business situation as a whole looks very much brighter. All in all dealers are squaring away for what they believe will be a good year's business, the only serious drawback at present being that the season is fully a month late.

Retail yards are getting their teams busy and say that contractors are increasing their orders steadily and rapidly now.

Knox, Strouss & Bragdon report much more city work on hand than one year ago, but say that up to date fewer jobs have appeared in the boroughs for figuring.

The D. J. Kennedy Company is very busy and expects a big year. Their plants were never in so good shape to turn out large stocks of building supplies as at present.

The Greater Pittsburgh Retail Lumber Dealers' Association held its regular monthly meeting Monday night at the Hotel Henry. President E. M. Diebold was in the chair. Secretary A. C. Rightor of this association made a business trip to New York and Philadelphia lately.

City councils have decided to spend about \$240,000 for repaving this year. This sum will be scattered throughout the city and a considerable portion of it will be in the hill district and on the South Side.

Allegheny county is arranging to build several river bridges this year and more ordinary county structures than in 1911. The commissioners are also preparing plans for new roads to cost \$350,000. The boroughs will pay one-third the cost of these and the county two-thirds.

At a recent meeting of the Manufacturers' & Contractors' Club April 3 in the Lewis block, Louis E. Whitney, Pittsburgh representative of the Alpha Portland Cement Company, addressed the members on competition.

The James H. McQuaide Company carried off the big prize of the year—the contract for removing the hump, its bid being \$651,002.50.

A few days after the contract was awarded the McQuaide Company withdrew from the project on the ground that it was not equipped to start the work and carry it ahead as rapidly as the city desired. Its bond of \$20,000 which had been put up was therefore released, or rather was assumed by Booth & Flinn, Ltd., to whom the contract was awarded. Actual work on the project was started April 5 by Mayor William A. Magee, who removed the first dirt on Grant street opposite the Frick building with a silver pick and shovel presented by Hubbard & Co. This project is going to be the biggest boom for retailers that the city has ever started, inasmuch as the resulting rebuilding in all the streets affected is going to make an enormous demand for all kinds of building and street material.

Pittsburgh showed up well in building operations in March, coming in third of the large cities and making a notable gain over Cleveland, which lost compared with 1911. Pittsburgh's total for the month was \$1,517,452, or a gain of 27 per cent over 1911. Philadelphia, on the other hand, lost 33 per cent as compared with last year and Baltimore 45 per cent.

## WEST COAST RETAILERS.

San Francisco, April 16.—The building material business remains in good shape all over the Coast, and in San Francisco at least the situation is much better than a year ago. There is more firmness in prices of some of the leading materials, such as cement, and the demand for large construction work has increased greatly. California crops have been saved by timely rains, bringing out many large orders which were held up a month ago, and the need for some additional moisture will stimulate rather than retard the movement, causing great activity in irrigation work.

The San Francisco building record for March is the best since June, 1909, the total of building permits being \$2,593,780. Other large cities of the Coast, with the exception of Los Angeles, have made good progress over the preceding month, though Seattle, Wash., and Sacramento, Cal., are the only towns showing a gain over March, 1911. Most of the improvement is in the way of small buildings, though in San Francisco and Oakland contracts have been let for several large structures in which concrete will be the principal material. The local city administration has secured immediate action on the civic center improvements, for which the city voted \$8,800,000 bonds late last month, and it is possible that work may be started on the city hall and auditorium before the end of the year. The exposition company is still occupied with the filling in of the grounds and the allotment of sites to participants, having started no actual construction.

Some excitement was caused among material dealers recently by the report that Judge Graham had pronounced the new mechanics' lien law invalid. This report was not altogether correct, though the case at issue may involve the validity of the law, in which dealers and contractors are vitally interested. It is predicted that the case will be taken before the higher courts of the state. The case at issue was brought by a plumbing supply dealer, but may affect all classes of material men.

The dealers' and contractors' association of Oakland met with the directors of the Chamber of Commerce of that city last week to consider means of keeping municipal work for local firms. This action was due to the recent awarding of plans for many school buildings to outside architects, which it is feared will result in the contracts for construction and supplies going to firms in other cities. The material men, who are supported by union labor, assert that the present city administration was pledged before the recent bond election to keep the business resulting from it as much as possible for local firms.

W. H. Ford, formerly of Ford & Malott, who last month incorporated as the Fibrestone & Roofing Company, San Francisco, Cal., has separated from that concern, taking over the large gravel plant in Niles canyon across the bay, which he will operate independently. Further improvements are being made in this plant, which is prepared to furnish a fine quality of washed and graded gravel, etc., for either roofing or general building purposes.

M. E. Reynolds, of Rutland, Ill., has sold his yard to the R. G. Mackemer Lumber Company of that place.

W. I. Jackson, retailer at Farmington, Ill., is moving his yards to a new site which he recently purchased.

J. H. Parr has been elected president of the Farmers' Lumber and Grain Company, of Glasford, Ill. The company declared a dividend of 20 per cent on its capital stock.

Arthur Carls has acquired an interest in the retail business at Virginia, Ill., which has been conducted by C. W. Hofstetter. The new company has been incorporated with a capital stock of \$10,000, as the Hofstetter-Carls Lumber Company. The incorporators are C. W. Hofstetter, A. B. Carles and Mary Hofstetter. The yard has been enlarged and the stock increased.

The Isaac Hill Lumber Company has moved into its new two-story home on School street, Hillsboro, Ill. Two offices, with mission furniture and woodwork to match, and a builders' hardware stock room are on the first floor. The second floor and basement are storage rooms. This company is building a branch yard at Taylor Springs, an industrial suburb where a \$6,000 or \$7,000 stock of lumber, cement lime plaster, sand, etc., will be carried.



## CHICAGO RETAILERS.

Chicago, Ill., April 20.—Builders' supply retailers throughout the city experienced a harder winter and more severe weather up to a month ago than they have faced in the past decade. In consequence they have done less business during this period of severe weather and have waited longer for business to open up this spring than usual. It was unfortunate for them that when weather conditions became such that they had reason to expect a demand for building material, the carpenters' and lathers' strikes interfered.

Indications for an active building season in Chicago are met with in all sections of the city. In the "loop" more large buildings are now assured of going up than there were last year. In the outlying districts many small cottages and small two-story flat buildings as well as pretentious apartment buildings have been in course of projection and erection since the first of March.

The demand for building material for the past two weeks has been more than satisfactory to the local dealers, and all believe that conditions in every way are now satisfactory and that indications for the coming season are brighter in building circles than they have been for the past two years. They have no fear of the presidential campaign checking trade in their line, and speak of the only handicap they fear being the low prices for all building material, which leaves hardly any margin for profit, but expect when activity sets in during the building season prices may take an upward turn.

J. B. Tuthill, President of the Tuthill Building Material Co., with main office at 227 West Sixty-third street, said that he had experienced the worst weather last winter and spring than for many years; for that reason business had been very slack up to the present time. In his district on the south side many buildings are projected and will shortly create a brisk demand for building material.

Walter L. Woods, President of the Standard Material Co., located at Sixty-sixth street and Lowe avenue, said that on account of the severe weather he had done no business to speak of up to the present time. With the weather breaking, all indications are that there will be a brisk demand. He said he would now be busy, had it not been for the carpenters' and lathers' strike. Great preparations are now in progress for the erection of small flats and residences. Prices for all building material are lower this year than ever before. This company is building across the street from its yard a two-story brick barn in which will be stabled seventy-four horses. The barn will also contain a modernly equipped blacksmith shop. This barn is located at 6530 Lowe avenue. F. B. Carver, formerly superintendent of the building and repair department of the Chicago Telephone Co., bought an interest in this company and was elected secretary and general manager on April 1 last.

J. G. Coates, manager of the Templeton Line Co.'s yard, 348-358 West Fifty-ninth street, reported that he had plenty of work to keep its teams busy, but many of the buildings when they reached a point of needing carpenters stopped work, and for that reason the demand for building material was checked during the carpenters' strike. Now that the labor situation is clearing he believes prospects will be splendid. He said architects' offices are full of plans and only waiting for a clear labor field to go ahead. The demand for building material is commencing to get brisk and indications for the coming season are bright. Prices for materials are lower than they have been for two years. This yard was opened last October and is located on the tracks of the Pennsylvania Railroad. A switch track from this road runs alongside of the warehouse and the cement is shot down a chute from the elevated tracks into the warehouse, saving much time and labor. The company will soon build more warehouse room. The yard is splendidly equipped for handling material economically and promptly.

It was reported at the yard of the Chicago Contractors' Supply Co., at 5835 Loomis boulevard, that it had done but very little business this year. Had it not been for the carpenters' and lathers' strikes last month, it could not have supplied the demand for building material. With these strikes out of the way, the outlook is very bright. Many buildings were started in this neighborhood, but after concrete foundations had been put in, work ceased on account of the strikes. Prices are all shot to pieces on crushed rock, lime, plaster and other materials. Cement prices, however, are a little firmer this month.

H. O. Heitmann, president of the Union Coal, Lime & Cement Co., located at 5834-5840 Ashland avenue, returned only a few days ago from Los Angeles, Cal., where he had spent the greater por-

tion of this year, and stated that he did not have the situation here fully in hand and was not able to give intelligently the conditions in the builders' supply field. He believed, however, that with the labor troubles out of the way the coming season would bring an activity in building circles not less than those experienced in former years.

L. Drouin, who is the outside salesman for the Lake Building Material Co., located at Forty-seventh and Leavitt streets, takes a cheerful view of conditions. He is closely in touch with contractors, who, he says, are planning for a very active season. They labor under the impression that the carpenters' and lathers' strikes being settled, no other labor troubles will interfere with building operations the coming season. The demand for building material is becoming active. All the teams of the company are now busy and it expects a good summer business. More buildings are going up in this district than last year.

J. L. Mortlock, manager of the Waukesha Lime & Stone Co.'s yard, located at Devon avenue and Sheridan road, takes a very bright view of business this year. He said that he believes it will be the banner year in this district on the north side for building of high class apartment buildings. The company has been kept very busy for the last



CHAMBER OF COMMERCE BUILDING, CHICAGO, ILL., HOME OF THE BUILDING MATERIAL INTERESTS.

month, keeping every team going, and has been obliged to hire twice the number of teams its owns. The only drawback that he can see for this year's business are the very low prices. All building materials are lower than they have been for some years past.

At the yard of the M. A. Staley Co., located at 1128 Cornelia avenue, it was stated that business had been rather slow up to about the first of April. There was just enough business to keep teams fairly busy and make both ends meet. This was especially the case during the strike of the carpenters and lathers in March. Many buildings are said to be going up in this part of the city and with the labor troubles settled, the coming season promises to be active in building circles.

Alfred Frerk of Henry Frerk Sons, at 3135 Belmont avenue, said that on the whole conditions are no worse this year than they have been for some years in the past. He said that contractors said that as soon as the boys quit quarreling, meaning the boys in the labor field, they will have a great bunch of work, greater than last year. Mr. Frerk believes that conditions will be the same as last year, dragging for some months, and then a general rush of business late in the fall.

Arthur Druecker of N. J. Druecker & Co., 2634 North Artesian avenue, dealers in Wisconsin lime and builders' supplies, said that they had had a good business this entire year and had been kept busy. There is a good deal of building going on in this part of the city and much work is going ahead on small buildings. It was his belief that business will be good this year. While the volume of business undoubtedly will be larger, it is handicapped by low prices, lower than they have been for some years in the past, which leaves practically no margin of profit.

A. H. Halleman, president of the Templeton Lime Co., at Homan and Grand avenues, takes a cheerful view of conditions in the builders' supply field for the coming season. He says there is much building going on in that section of the city, and since the settlement of the carpenters' and lathers' strikes, conditions look good. He believes that indications point to greater activity this summer than usual and does not believe that the presidential campaign will interfere with business in this line to any extent, but the handicap of low prices, which leaves hardly any margin of profit, is the problem which the dealers in building material will have to face.

The Circuit Supply Co., located at Eighty-third street and Escanaba avenue, South Chicago, has found business so far this year slack. O. H. Hansen, manager of the company, reports building operations brisk in Bryn Mawr, the other side of Windsor Park, and also in the northern section of the South Chicago district. It looks to him, now that the carpenters' and lathers' strikes are settled, that a good year is ahead of the dealers in building materials. He has secured contracts for many miles of cement walks which will keep his company busy in the immediate future.

Ringer Bros. bought the coal yard located at Cheltenham Depot on the Illinois Central Railroad last year in May. While the yard will continue to handle coal as in the past, Ringer Bros. have stocked it with a complete line of builders' supplies. Odo Ringer reports business opening briskly, and now that the carpenters' and lathers' strikes have been settled he says there are indications of more building in his immediate neighborhood than last year. In the last week he has furnished Universal cement for three jobs; two of these jobs were for two-story flat buildings and one for a four-story flat building, including foundations of concrete.

The Tobin Bros. Company, whose yard is located at 9326-9366 South Chicago avenue, is building a new lime house in its yard, 20x20 feet, on piers 15' 6" high, on which the hopper will be placed. The height of the bin is 24'. This bin contains air pipes for ventilation, is perfectly air tight and the top has a ventilator 10'x3'x2'. When the lime shoveled in is hot, the hot air is let out by means of the ventilating pipes. The capacity of the bin is 450 barrels. Air shafts run all the way around it and inside the air shafts is a filler of slack lime, keeping a cool temperature constantly. This is T. M. Tobin's own idea and will undoubtedly make the most perfect lime house when completed. Teams are driven underneath the bin and wagons loaded by releasing the chute. He is confident of keeping lime in this bin in good condition for two months or more in the hottest summer weather. Mr. Tobin says that there is very little building going on in South Chicago proper; building operations being confined to Windsor Park, Bryn Mawr and other contiguous territory in that neighborhood. He reports business slack; prices low with practically no margin of profit and prospects poor for the coming season.

The Calumet Coal & Teaming Co. moved into its new office building recently, located at 9022 Commercial avenue, South Chicago. The office is among the most elegant in the builders' supply business; its counters, chairs and other appointments are of solid mahogany. It contains a private switch board which connects with its three yards located in the district known as South Chicago. The president's room back of the general office, with its desk and chairs of solid mahogany, is rich in appearance and specially adapted for the convenience of clients. The growing business of this company demanded the centralization of its office force, which is now kept in close touch with all its three yards, where each foreman receives his orders now from the central office. Charles P. Thompson, president of the company, said that there is great activity displayed in building in the territory contiguous to their Seventy-fifth street yard and very little building done to speak of in South Chicago proper. Prices, he said, are lower than they have been in years. The company's teams have been kept busy with hauling material from their yards and have been obliged to hire teams on their construction work. In its construction department, it has secured in the last two months a number of large contracts for street paving and consequently has



been busy in this line of work. He said now, that the strikes of the carpenters and lathers are settled, prospects for the coming season look encouraging.

With the beginning of this year the E. C. Donnellan Lumber Co. bought the builders' supply yard of the N. A. Williams Co., located at One Hundredth street and Avenue H. C. D. Russell is the manager of this company. The company will abandon its lumber yard at Ninety-second street bridge and move its entire stock of lumber to Eighty-eighth and Erie streets on the Illinois Central. The old Williams yard on the Baltimore & Ohio, Elgin, Joliet & Eastern Railroad and Central Western, will be used for the builders' supply trade for South Chicago. Mr. Russell is working up a good trade in builders' supplies.

Last March Paul E. Lambe associated himself with Mr. Morris Koch, formerly of Farley, Koch & Co., and will continue to conduct a general building material and clay products business as heretofore at 4601-5 Armitage avenue, under the firm name of Koch & Lambe. Mr. Koch believes the outlook for the coming season good and indications exceedingly bright. He reports much building going on in the town of Cragin, the town in which his yard is located. Foundations for the buildings in this district are all of concrete. The buildings in process of erection are mostly all cottages and small flat buildings. He reported that business commenced to get brisk the last days in March and since that time it kept busy supplying the demand. The only drawback that he can see for business in the builders' supply line this year is the low prices which he says are practically all shot to pieces.

The F. Schultz Lime Co., at Sixteenth and Ruble streets, has all the work it wants. It has kept its teams busy all winter. Ernest Wetzhold, manager of the company, said that there is a great deal of building going on in every section of the city and he noticed that practically all the foundations that have been put in this spring for buildings have been all concrete; hardly any rubble stone now being used. He believes the building season will show more activity this summer than last year.

The Chicago Clay Products Co. this month took possession of their new yard at Fortieth avenue and the Burlington tracks, abandoning their old yards at Forty-third and West Taylor streets. J. F. Kryda stated that they did nothing this winter on account of the severe weather, but for the last month have been busy with partition work, now using five teams instead of two. The buildings, barn and warehouse in the new yard will be of modern construction and the last finishing touches put on them in the course of two months. A switch track from the Burlington main line runs through the center of the yard, giving the company superior shipping facilities. Mr. Kryda says the contractors he has come in contact with see much work in sight for the coming season and he believes that indications point to very bright prospects.

George T. Carpenter this month moved to his new yard at the southeast corner of Forty-first avenue and Taylor street, a block west from his old location. He is an extensive dealer in sewer builders' supplies and a manufacturer of cement catch basin covers. He has invented and lately placed on the market a sectional interlocking catch basin block made of concrete. He reports the demand for this block great and that it taxes his energies to supply it. He reports business opening up well and that there is much building going on in the district west of Fortieth avenue.

The Chicago & Oak Park Supply Co.'s yard, located at Forty-sixth and Lexington avenues, has been kept fairly busy for the past month. The superintendent of this yard spoke of the outlook in this section of the city as fairly good. There is quite a good deal of building going on now, which he believes will increase perceptibly since the strike of the carpenters and lathers was settled.

From the number of inquiries J. J. Croake, president of the J. J. Croake Co., located at 2929 Fullerton avenue, received in the past four weeks, it appears to him that indications point strongly to an active season in the builders' supply line. Many foundations for buildings in this section of the city have been put in this spring, all of concrete. Many estimates for foundations of rubble stone were submitted, but nearly all changed to concrete. Many apartment and two and three story flat buildings are going up and many public improvements are being made in this section. "While it is a little bit early," said Mr. Croake, "to make predictions business has started out pretty briskly since the first of this month. Vases and garden furniture manufactured of cement have been in strong demand this spring. We have recently put up a new shop in the rear of our yard for this line of ornamental work. We are now putting up an ornamental concrete fence around the La Salle School Building at Eugene and Hammond streets."

The Wisconsin Lime & Cement Co. reported business in the last month fair, and believe that with the settlement of labor troubles the coming season will be a brisk one.

C. B. Sheffer, president of the Garden City Sand Co., with offices in the Chamber of Commerce Building, reported that they had been busy from January up to the present time and that the season now opens up good. They received the other day an exceedingly large order for Toch Bros.' cement fillers and cement floor paint, amounting to 32 barrels. The company is now putting up the fixtures used in the remarkably attractive exhibit in the Cement Show at the Coliseum last February, in one of their rooms on the seventh floor of the Chamber of Commerce Building. This exhibit room



CALUMET COAL & TEAMING COMPANY'S NEW OFFICE BUILDING, SOUTH CHICAGO.

will be very attractive when finished, which will be in the course of a few weeks, showing their commodities of stone-kote and interior finishings.

Otto Knoepfle, who has been manager for the Darlington Lumber Company at Pana, Ill., has taken a similar position at Gillespie, Ill. He is succeeded at Pana by A. B. Phelps.

The Bagnall-Taylor Company, of Cleveland, Ohio, has been incorporated with a capital stock of \$10,000; to deal in plaster, cement and other building material. The incorporators are A. R. McManning, Jr., E. S. Cook, F. S. McGowan, S. Chestnutt and L. M. Percival.

The C. T. Nelson Lumber Company, of Columbus, Ohio, has been incorporated with a capital stock of



INTERIOR CALUMET COAL & TEAMING COMPANY'S NEW OFFICE, SOUTH CHICAGO.

\$150,000, to deal in building supplies. The incorporators are C. T. Nelson, H. B. Nelson, George Van Gilden, Fred Schmitt and E. C. Nelson.

The O. H. Paddock Lumber Company, of Pana, Ill., has taken over the yard of the Darlington Lumber Company at Nokomis, Ill., and the two yards at Nokomis will be consolidated.

#### CINCINNATI RETAILERS.

Cincinnati, Ohio, April 14.—Building operations in this city will be more active than last year. Many large buildings are going up in the business district; many warehouses and residences are in process of construction, and the coming season has a more encouraging outlook than last year, which was by no means unsatisfactory. Builders supply retailers have found the volume of trade larger this year than that of the corresponding period of 1911, notwithstanding the extremely bad weather conditions which naturally held business back.

The Moores-Coney Company, with offices occupying the entire ninth floor of the St. Paul Building, operates six yards in various parts of the city for distribution of material. It handles not only one of the largest general lines of builders' supplies, but also carries a large and complete line of building specialties. F. Lawson Moores stated that last year the volume of business was very satisfactory, and expects from indications so far this year, even better results.

The firm of L. H. McCammon Bros., with offices in the Johnson Building, Cincinnati, Ohio, was established in 1880. They are among the largest dealers in builders' supplies, and operate a large yard on Harrison Street and Western Avenue, occupying nearly two acres of ground. Two warehouses in this yard stand on switch tracks, running from the Baltimore & Ohio and Southwestern Railway, which also makes connection with the Big Four and Queen & Crescent Railroad. Their switching railroad transportation facilities are perfect. The storage capacity of the warehouses are easily twenty-five carloads of cement, plaster, etc. For hauling material from this yard to jobs in various parts of the city, they operate eight teams which they own, and hire as many more in the busy season. They handle large quantities of cement, plaster and other building material in carload lots. They handle cements of the Virginia Portland Cement Co., the J. B. Speed Portland Cement Co., and the Superior Portland Cement Co.; plasters of the United States Gypsum Co., and the American Cement Plaster Co., of Lawrence, Kansas. They handle the Springfield and Marion, Ohio, lime; sewer pipe of the American Sewer Pipe Co., and the National Fireproofing Co., of Pittsburgh, Pa.; mortar colors of the Chattanooga Paint Co.; metal lath of the Sykes Metal Lath & Roofing Co., of Niles, Ohio. They are agents for the pressed brick of the Hydraulic Pressed Brick Co., St. Louis, Mo., the McArthur Pressed Brick Co., of Ohio, and the Columbus Pressed Brick & Terra Cotta Co. Mr. McCammon reported business last year satisfactory and said that building operation this year promises to be more active than it has been for the last two years.

The Hyde Park Supply Co. was incorporated five years ago. Its office, yard and warehouses occupy fully two acres of ground at Madison Road and the Norfolk & Western Railway Company's tracks. Three switch tracks from this road run into the yard and alongside the three warehouses, which have a storage capacity of 10,000 barrels of cement, plaster and other building material. A large barn in this yard stables some thirty horses and fifteen teams are used for hauling material to jobs within the city limits. Recently they have put in commission a four-ton Peerless auto truck, which is doing satisfactory and yeoman service. The company handles Atlas, Superior, Speed, Lehigh and Old Dominion Portland Cement, plaster of the United States Gypsum Co.; sewer pipe and fire brick of the American Sewer Pipe Co., and the Robinson Clay Products Co.; mortar colors of the Chattanooga Paint Co.; fire clay of the Harbeson-Walker Refractories Co.; metal lath of the Northwestern Metal Lath Co. The company owns sand and gravel pits at Newtown, five miles from Cincinnati and also a brick yard, where it manufactures common brick, having an output of four million brick.

The Contractors' & Builders' Supply Company, located at 2849 Stanton Avenue, operates two large yards in Cincinnati. These yards are on the tracks of the Cincinnati, Lebanon and Northern Railway. The storage capacity of their warehouses is approximately twenty carloads of cement, plaster and other material. It handles Atlas Portland cement; plaster of the Grand Rapids Plaster Co.; Springfield, Ohio, lime; sewer pipe, fire brick, fire clay, etc., of the Robinson Clay Products Co.; metal lath of the Cleveland Expanded Metal Lath Co., Cleveland, Ohio; sand, gravel, and a full line of builders' material. Indications for an active business the coming season were reported exceedingly bright and better than those which obtained last year, which was perfectly satisfactory in volume of trade.



F. LAWSON MOORES, CINCINNATI, O.

H. J. Conkling, who is an extensive dealer in builders' supplies, with a yard at Gilbert Avenue, near Court Street, occupying nearly three acres of ground, has been in business here over twenty years. The Pennsylvania line, the Cincinnati, Louisville and Nashville Railway, and the Norfolk & Western Railroad tracks skirt the yard, which has a switch track running into it from these roads, and also has connection with the Big Four; the Baltimore & Ohio and the C. H. & D., through the Belt line, giving him excellent railroad shipping facilities. The switch track which runs through the center of the yard accommodates seven freight cars. This yard is most centrally located, making deliveries of material to all parts of the city most convenient. The warehouse has a storage capacity of over 5,000 barrels of cement and stands alongside the switch track. Mr. Conkling operates twelve teams during the busy season. He handles Alpha and Atlas Portland cements; plaster of the Grand Rapids Plaster Co.; Springfield and Marion, Ohio, lime; Ohio sewer pipe, metal lath, mortar colors, Mount Savage fire brick, fire clay, sand and gravel, with a complete line of contractors' and masons' supplies. Mr. Conkling reported a good year's business in 1911 and said that the indications for the coming season were fairly bright, as it is generally believed that building operations this year in Cincinnati will be very active.

John V. Nicolai in 1873 founded the large and extensive builders' supplies business of the Cincinnati Sewer Pipe Co., which was incorporated in 1902. Its offices and yard are located at Elm and Water streets, and within four blocks of the public landing on the Ohio River. A switch track runs through the yard to the warehouse, which connects every road entering Cincinnati, giving it most excellent shipping facilities, both by rail and water. It handles cements of the Dexter Portland Cement Co. and the Crescent Portland Cement Co.; plaster of the Grand Rapids Plaster Co., United States Gypsum Co.; Springfield and Marion, Ohio, lime and the hydrate, of the Ohio & Western Lime Co.,



CHANDLER &amp; COMPANY'S EXHIBIT AT APPALACHIAN EXPOSITION.

and the Woodville Lime & Cement Co.; sewer pipe of the American Sewer Pipe Co., exclusively. Mortar colors of the Chattanooga Paint Co.; metal lath of the Central Expanded Metal Lath Co., Pittsburgh, Pa.; waterproofing of the Ceresit Waterproofing Co., of Chicago; sand, gravel, crushed rock and white sand, of the Ottawa Silica Co.; fire brick and fire clay of the Harbison-Walker Refractories Co., the Ashland Fire Brick Co., and the Petersburg Fire Brick Co., with a full line of builders' specialties, used by masons and contractors. Mr. Nickel reported business exceptionally good, having experienced a big increase in the volume of trade last year over that of 1910. Indications for the coming season he reports very bright.

J. E. McCracken Supply Co., located at 629-633 E. Front Street, is probably the oldest builders' supply concern here, being established in 1877. The yard occupies a half block, with switch track running through it accommodating ten cars, which connects with every road entering Cincinnati. The storage capacity of its warehouse is approximately fifteen carloads of cement, plaster, etc. He handles the Speed, Wolverine and the Atlas Portland cements; plaster of the Grand Rapids Plaster Co., and Calvin Tompkins of New York City; lime from Springfield, Ohio, and G. S. Irvine of Cedarville, Ohio; sewer pipe of the Evans Clay Products Co., Uhrichsville, Ohio; metal lath, mortar colors of the Chattanooga Paint Co.; fire brick and fire clay from West Virginia; sand, gravel and common brick. It is said that Mr. McCracken was the first man to introduce American Portland cement in this country, at that time called the "Wampum," now known as the "Castalia," and also the first man to introduce pressed brick in this market and also street and vitrified sewer brick in Cincinnati. He reported a decided increase in volume of business last year over 1910 and believes that indications point to a fairly active season, depending somewhat upon local conditions in Cincinnati.

The James G. Chrispin Lime & Cement Company located at 818 to 828 Ready Street, between Court and Eighth Streets, opposite Eggleston Avenue, was founded some seventeen years ago by James G. Chrispin, its president and manager. Its Norwood yard is located at Norwood Avenue and the Cincinnati, Louisville & Nashville tracks; its Hyde Park yard at Wasson Road and the N. & W. tracks and Idlewild Junction yard at Langdon Avenue and the Cincinnati, Louisville & Nashville tracks. Switch tracks run into all these yards from these respective railroads and a full line of builders' supplies is stored in each. This company is doing a large and prosperous business.

#### KNOXVILLE RETAILERS.

Knoxville, Tenn., April 16.—Chandler & Company at 426 W. Depot Street, is the only exclusive firm dealing in a full and complete line of builders' supplies. Competition, however, in Knoxville is sharper and more annoying than in most southern cities for the reason that every hardware store, plumbing shop and mantel manufacturer carry some builders' supplies as side lines using these side lines as baits for their regular business. The company operates two yards. The main yard is at West Depot Avenue, and the Southern Railroad, occupying about one and one-half acres; the other yard in Knoxville covering two acres, is used principally for a storage yard. Both yards have switches from the Southern Railway, accommodating twelve freight cars. During the busy season, they use eight teams for hauling material to jobs. They handle cements of the Atlas, Lehigh and

Southern States Portland Cement Companies. Plasters of the United States Gypsum Co., and lime manufactured by the Tennessee Marble Lime Company. Sewer pipes of the Chattanooga Sewer Pipe & Fire Brick Co., roofing of the Patent Vulcanite Roofing Co., of Chicago; mortar colors of the Chattanooga Paint Co., fire brick, fire clay, wall coping, etc., of Chas. Taylor Sons Co., of Cincinnati, Ohio, and the Louisville Fire Brick Co., of Louisville, Ky.; the product of the Columbus Brick & Terra Cotta Co., and the Iron Clay Brick Co., with a full line of builders' specialties needed by contractors and builders. The company does a very large and prosperous business and Mr. Chandler reported that volume of trade very good last year with very fair prospects for the coming season.

One of the accompanying



FIRST BUILDING CHANDLER &amp; COMPANY OCCUPIED IN KNOXVILLE, TENN.

cuts shows the office and store building, which is a reinforced concrete structure faced with pressed brick.

Another picture shows the firm's exhibit at the Appalachian Exposition in 1911, an enterprise, which in 1913 will take a national scope under the name of The National Conservation Exposition. The picture shows the material handled.

The other illustration shows where the concern started in business in 1891 under style of The Knoxville Supply Co. Connected with this picture and with special reference to the delivery team is a story which is interesting. It is not usual that a firm takes credit for what success it has attained other than through the efforts, etc., of its owners, but the story is as follows:

In the spring of 1891 Geo. P. Chandler (now president of the Tennessee Coal Co., and general manager of the Kimberly Mining and Manufacturing Co.) came to Knoxville to establish The Knoxville Supply Co., to handle as specialties certain building material, sold as side and incidental lines by other concerns.

With Mr. Chandler came Joe R. Morgan (now a prominent roofing and paving contractor) as teamster, bringing a pair of iron gray draft horses known as "Tom and Dave."

The capital of the supply company was limited, the business an innovation, and the manager young and a stranger; Knoxville was reacting from a boom, and the dreadful panic was approaching. It is doubtful if the business could have been successfully started, notwithstanding the hard work of its manager but for a peculiar assistance.

The team "Tom and Dave" was undoubtedly the finest in the city, and was kept in good condition by its enthusiastic owner, and driver. At a time when men commanded no especial attention, and perseverance accomplished little, the eyes of the horse loving public were riveted on the team; inquiries were made about it; people followed it to its home, and became acquainted with the business. Trade came, and the business was a success.

The manager of the supply company and the driver of the team have retired to other fields, and Tom and Dave passed away, after having been pensioned and permitted to spend the days of their old age in comfort.

The present firm of Chandler & Co. succeeded the Knoxville Supply Co., and to the faithful team is conceded the credit for being the most vital factor in passing a crisis, and establishing a business.



CHANDLER &amp; COMPANY'S OFFICE AND STORE BUILDING, KNOXVILLE, TENN.



## ATLANTA RETAILERS.

Atlanta, Ga., March 15.—In building material lines in this city, conditions were reported satisfactory for the year 1911. Although building permits were approximately one million dollars less than the year 1910, retailers in builders' supplies experienced not only a good year, but a decidedly increasing volume of trade. The retailers in builders' supplies here are as energetic and progressive as the reputation Atlanta has gained for being wide awake. A world of work will be done this year in the construction of new hotels, apartment and office buildings, paving of streets, sewers to be laid in new territory taken into the city limits two years ago, which will require vast quantities of cement, plaster, sewer pipe and other builders' supplies of which the dealers here have great quantities stored in up-to-date yards, and the best and most economical methods of handling the same in making quick and prompt deliveries. The outlook for the coming season in Atlanta is more promising for great activity in building operations than for many years past. There seems to be no limit to the

wall coping, etc., of the Southern Terra Cotta Co., Atlanta, Ga. Fire brick, fire clay of the Harbison-Walker Refractories Co., Pittsburgh, Pa.; mortar colors of the Chattanooga Paint Co.; pressed brick, and a full line of builders' specialties. A barn in the yard, stables, twenty-four horses. The company operates twelve teams for hauling material to jobs in different parts of the city. It is stated that the business of this company has increased more than 100 per cent in the last three years, notwithstanding that building permits were less by a million dollars in 1911 than the previous year. The firm of Dunning & Son consists of Harry K. Dunning and J. L. Womack.

The firm of Sciple & Son, with offices at 19 Edgewood Avenue, Atlanta, Ga., was founded by Geo. W. Sciple in 1872. Its coal and builders' supply yard is located at West Fair Street and the Georgia Central Railroad tracks. A switch track runs into the yard close to its warehouse which has a storage capacity of seventy-five hundred barrels of cement. It handles the cement of the Southern States Cement Co.; plaster of the Southern Gypsum Co., and

plaster are unloaded and shot down a chute, saving a great deal of handling.

A convenient feature introduced by this company and much appreciated by the contractors throughout the city, are its lime boxes which it lends to the contractors and hauls to the jobs where they are needed. These lime boxes are neatly built of wood, painted slate color, with the name of the Campbell firm painted on its sides. These boxes are placed on two wheel trucks, hitched to the delivery wagons and left at points where needed. The company has 120 of these boxes in constant use which are seen during the building season in all parts of the city. A wide driveway runs through the warehouse on the first floor, where the loading of material is made. The first floor of the warehouse is used for the storage of mortar colors, etc., while the second floor level with the tracks on the elevated switch is used for the storage of cement and plaster. This warehouse is located across the street, some fifty yards distant from the first warehouse named. Lime in bulk is unloaded direct from the car on elevated switch track into the lime house on the level with the street which has a capacity



R. O. CAMPBELL COAL COMPANY'S WAREHOUSE, ATLANTA, GA.



R. O. CAMPBELL COAL COMPANY'S BUILDERS' SUPPLY YARD.



R. O. CAMPBELL COMPANY'S SEWER PIPE AND TILE YARD.

progressive spirit and the rapid growth of Atlanta, the liveliest city in the southern states.

Dunning & Son, with offices at 18 N. Forsyth Street, Atlanta, Ga., was established as the Ladd Lime Company, some thirty years ago and succeeded by the present firm ten years later. Its warehouse and yard are located at 15 and 17 Oakland Avenue. Its warehouse, 125'x275', is of modern construction and has a capacity of storing fifteen thousand barrels of cement. A switch track runs along the side of this warehouse in the yard from the Georgia Railway, the Atlantic & West Point Railway and the Louisville & Nashville Railroad. These three roads operate under the Atlanta Joint Terminal Railway Company. The switch track accommodates eight freight cars. It handles the cements of the Southern States Portland Cement Co., of Rockmart, Ga., and the Magnolia Brand of natural cement, manufactured by the Southern Cement Co., of Birmingham, Ala. Plaster fireproof partition blocks and Sackett plaster board of the United States Gypsum Co.; lime of the Anniston Lime Co., of Alabama, and Hydrated lime of the Longview Lime Works of Alabama; sewer pipe of the Bibb Sewer Pipe Co., Macon, Ga.; flue lining,

lime of the Tennessee Cement & Lime Co. Sewer pipe, flue lining, wall coping, etc., of the Chattanooga Sewer Pipe & Fire Brick Co.; metal lath of the Bostwick Steel Lath Co., Niles, Ohio; mortar colors of the Cora Paint Co., Philadelphia; pressed brick and a line of builders' specialties. This firm is one of the oldest in Atlanta and does a good and conservative business.

The R. O. Campbell Coal Co., with general offices at 10 Decatur Street, has been in existence in Atlanta for more than twenty-five years. It commenced handling a complete line of builders' supplies five years ago and is today among the largest distributors of building material in the State of Georgia. J. T. DeJarnette, the manager of the building material department, has built this department up to gigantic proportions and has gained the reputation of being one of Atlanta's most prominent hustlers. It operates three big yards, centrally located, for the delivery and distribution of material to various points in the city of Atlanta. Its yard at Magnolia Avenue and the Southern Railway tracks, has an elevated switch track running from it alongside the warehouse on the level with the second floor where cement and

of three carloads of lime. The space in this yard devoted to the storage of sewer pipe is that of one solid block. Sewer pipe of all kinds and sizes are stored, not leaving any available space with the exception of a roadway for loading and unloading, and it was stated, that all this vast quantity of material was awaiting delivery within a week, to be used in the new addition to Atlanta where fifteen hundred new residences are in process of completion, and that this vast quantity of sewer pipe would be cleaned out of the yard and a new supply was on its way to be stored for immediate future use. The entire ground covered by this yard is fully three blocks, splendidly arranged for receiving, shipping and delivering the vast quantities of material distributed from this point during the season. The Decatur Street yard on the Southern Railway, the White Hall Street yard on the Central Georgia Railway and the Boulevard yards on the Southern Belt Railway, with switches running into all these yards, are largely used for the handling of coal. It handles the Royal brand of the Dixie Portland Cement Co., Chattanooga, Tenn., Portland cements, including Campbell's hydraulic cement, which has a great run with Atlanta contractors. Plaster of



DUNNING &amp; SONS' WAREHOUSE, ATLANTA, GA.



INTERIOR OF DUNNING &amp; SONS' WAREHOUSE.



the United States Gypsum Co., and the American Cement Plaster Co., of Lawrence, Kansas; lump lime of the Gager Lime Co., of Sherwood, Tenn.; mortar colors of the Chattanooga Paint Co., house paints of the Brooks Oil Co., Cleveland, Ohio; shingle stain paste to mix with creosote from the True-Tagg Paint Co., of Memphis, Tenn.; cement coat waterproofing and paint of the Heath & Milligan Manufacturing Co., Chicago; creosote for coloring shingles and paste in four colors and roofing paper of the Barber Asphalt Co., of Philadelphia, Pa. Fire brick of the Rome Crucial Fire Brick Co., of Georgia; flue lining, wall coping and sewer pipe of the H. Stephens Sons Co., Macon, Ga., partition tile of the Oconee Brick & Tile Co., Milledgeville, Ga.; metal lath of the Northwestern Expanded Metal Lath Co., Chicago; corner beads and channel irons of the Sharon Steel Hoop Co., Sharon, Pa., with a complete line of builders' specialties. This company is the sole agent for the State of Georgia; for the Dixie Portland Cement Co., the Sharon Steel Hoop Co., the Northwestern Expanded Metal Co., and the Gager Lime Manufacturing Co., as well as for the plasters it handles. Mr. DeJarnette, manager of the building department, says, "The company's contracts for cement and builders' supplies so far this year amount to more than the entire business they did last year, and last year," he said, "was a hummer."

This company owns coal mines in Alabama, Tennessee and Kentucky, its output being seventy-five cars a day, and buys on the outside as much as it produces. It ships coal to Illinois, Indiana, Canada and throughout the southern states. Two-thirds of the business it handles does not pass through its Atlanta yards.

The Carolina Portland Cement Company opened an office and yard in Atlanta eight years ago. Its office is located at 3½ Edgewood Avenue, and its warehouse and yard at Decatur Street and the Georgia Railroad Company's tracks. Peyre G. Hanahan is vice-president and general manager. It handles its own brand of cement, the brands of the Virginia Portland Cement Co., and the Standard Portland Cement Company; plaster of the Acme Cement Plaster Co., St. Louis, Mo.; lime of the Keystone Lime Co., Alabama; waterproofing of the A. C. Horn Co., New York City; metal lath of the General Fireproofing Co., Youngstown, Ohio; Medusa white cement, sewer pipe of the Southern Sewer Pipe Co., of Birmingham, Ala., and electroid rubber roofing. They are large operators in slate and operate in its plant a roofing department. It handles large quantities of metal shingles, corrugated iron roofing and Acme shingle stains, germicene wood preservers, and are large importers of Acme creosote. It is a local distributing agent for the products of the H. W. Johns-Manville Manufacturing Co., including asbestos and magnesia cements and white coverings. It also operates a department for pike coverings. It is now completing a contract for J. G. White & Co., engineers in New York City, for the Columbia Power Development Plant, South Carolina. It is also distributor for the Paine Lumber Co.'s forelock birch veneer doors and other builders' supplies. Its yard covers an entire block, and has one of the largest warehouses in Atlanta, being able to store in it ten carloads of cement at a time. The company is now sending out thirty-two thousand calendars 24" by 38", costing \$6,000. It is a striking commercial calendar, containing all the materials the company handles, and has been sent to all the cross-road merchants in the seven southern states. It is furnishing 150,000 barrels of the Standard Portland cement at Gants Rock near Columbus, Ga., for building the immense power development dam, also 30,000 barrels of this cement for the largest concrete bridge over the Chattahoochee River at Columbus, Ga. It owns and uses sixteen teams for hauling material to jobs in the city. It employs four salesmen who make their daily calls in swift automobiles. Mr. Hanahan stated that the volume of business of the company increased 40 per cent last year.

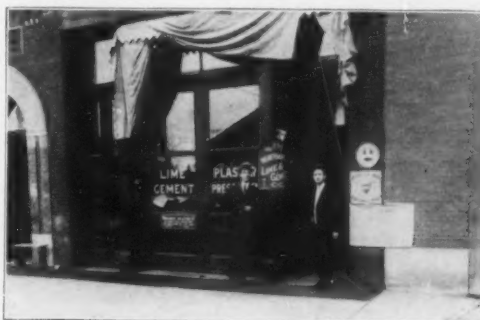
V. H. Kriegshaber & Son, one of the leading builders' supplies firms in Atlanta, have been in business for the last twenty years. Its office is located in the Candler Building, and the yard and warehouse at 383 to 387 Whitehall Street, running back to the tracks of the Central of Georgia Railway; a switch track from this road runs alongside the warehouse and by the yard. The warehouse contains twenty thousand square feet of floor space, and has a capacity of seventy-five hundred barrels of cement, plaster, etc. The firm owns and uses for hauling, twelve teams, and during the busy season hires as many more. It handles Atlantic and Gulf Portland Cement Company's product, and Atlas white cement; J. B. King & Co.'s plaster, the Windsor brand, and handle their own brand of lime, the Victor, made in Tennessee and handled in barrel and bulk; the Dixie Rock and Hydraulic cement, and hydrated lime of the Chickamauga Portland

Cement co.; sewer pipe of Stephens Bros. & Co., Milledgeville, and the Standard Sewer Pipe Co., of Rome, Ga. Red, black and brown mortar colors of the Chattanooga Paint Co., and the Lookout Paint Co.; waterproofing of Toche Bros., New York City; revolving doors of the Van Kannel Revolving Door Co., New York City; sand, gravel and crushed rock; pressed brick, with a complete line of builders' specialties. Mr. Kriegshaber reported the volume of trade good last year and prospects very bright for the coming building season.

The Jeffers Lime Company, with offices at 35 N. Forsyth Street, Atlanta, was incorporated last July. The business was started under the name of H. L. & T. A. Jeffers in 1909. The officers of the company are: T. A. Jeffers, president and manager; C. Shelverton, vice-president, and H. K. Drake, secretary and treasurer. Its warehouse and yard are at Angier Avenue and the Southern Railway, with switch track running into the yard alongside the warehouse. Its storage capacity is approximately one thousand barrels of cement. The capacity of its lime house is five cars of lime in bulk, which is on another switch track. The lime is dumped into the warehouse from the car. It handles the cement of the Piedmont Portland Cement Co.; plaster of the American Cement Plaster Co.; lime, both bulk and hydrated, of the Lagarde Lime & Stone Co., Alabama; sewer pipe, fire brick, fire clay and wall coping of the Bibb Sewer Pipe Co., Macon, Ga.; wood lath, sand, gravel and crushed rock, stone mountain granite for foundations and dimension stones, mortar colors of the Chattanooga Paint Co. This yard is within a stone's throw of Ponce de Leon Park on the north side, where high-class building operations are very brisk. Mr. Shelverton reported the volume of business better last year than any year previous, and indications for the coming building season more than bright.

#### MONTGOMERY RETAILERS.

Montgomery, Ala., April 15.—The Montgomery Lime & Cement Company, with offices at 234 and 236 Commerce Street, was incorporated in 1908. Its officers are: A. C. Davis, president; Phares Coleman, vice-president; C. D. Hume, secretary, and L. H. Hattemer, treasurer. Its yard is located on this street on the banks of the Alabama River and a switch track from the Atlantic and West Point Railway and the Louisville and Nashville Railway run into it. Its warehouse has a storage capacity of two thousand barrels of cement. It owns and operates six teams for hauling material to jobs in various parts of the city. It handles Alpha Portland Cement and the product of the Dixie Portland Cement Co., of Chattanooga, Tenn., as well as the cement of the Atlantic and Gulf Portland Cement Co., the Southern Cement Co., and the Lehigh Portland Cement Co. Plaster of J. B. King & Co., of New York City, the American Cement & Plaster Co., Lawrence, Kan-



OFFICE AND WAREHOUSE OF THE MONTGOMERY LIME & CEMENT COMPANY.

sas; lime of the Longview Lime Works and the Anderson Lime Co., of Alabama. Sewer pipe, fire brick, fire clay, flue lining and wall coating of the Southern Sewer Pipe Co., waterproofing of the Ceresit Waterproofing Co., of Chicago, and the Hercules Waterproofing Co., of Buffalo, N. Y.; metal lath of the General Fireproofing Co., of Youngstown, Ohio; sand and gravel, and common and pressed brick of the Sibley-Menge Co., Birmingham, Ala.; B. Mifflin Wood, Atlanta, Ga.; firebrick and fire clay of the Harbeson-Walker Refractories, Pittsburgh, Pa.; Best Bros. Keene's cement; mortar colors of the Chattanooga Paint Co., deadening felts of the Philip Carey Co., of Chattanooga; roofing of the Patent Vulcanite Roofing Co., of Chicago. It was stated by A. C. Davis, the president of the company, that its volume of trade was doubled last year and indications pointed to the same condition for the company this

year. Building operations the coming season point to great activity. The company has secured many contracts for furnishing cement and other material for a number of reinforced concrete buildings which are now in process of construction. The company is exclusive distributor in Southern Alabama for Royal Portland cement, Longview hydrated lime, King's Windsor plaster and for Hercules waterproofing for the entire state. It is the only exclusive builders' supply firm in Montgomery.

#### NASHVILLE RETAILERS.

Nashville, Tenn., April 20.—T. L. Herbert & Sons, builders' supply dealers, have just received a big locomotive crane which will be used in the handling of sand and gravel at their plant. The use of the crane will save the company thousands of dollars and will enable them to handle the material in a third less time. This was the only firm in Nashville able to make deliveries last week on brick, the high water shutting off many.

The Nashville Stone & Adamant Co. was the lucky bidder in three concrete bridge contracts just let by the County Court at Athens, Ala., a few days ago. The longest of the three bridges is to be fifty feet. All are to be of concrete re-enforced with steel. They will be commenced in a few days. They are on the Fayetteville, Decatur and Lucas ferry pikes. These will be the first concrete bridges in the county.

Secretary T. H. Evans, of the Nashville Builders' Exchange, reports several new building plans on file at the Exchange, among them: Apartment building for St. James Realty Co., Bowling Green, Ky.; five two-story store houses on Deaderick St., for O. F. Noel. Work will be started on these buildings at the earliest possible dates. Also plans for two handsome residences for John and Paul Stumb.

T. L. Herbert, of T. L. Herbert & Sons, has returned from Island Grove, Fla., where he owns a big orange grove.

Several contracts in various stages of completion are being carried on by Foster-Creighton-Gould Co., of Nashville. One which is about completed is the bridge across the Ohio River at Louisville, Ky. There were about 30,000 yards of concrete used in the construction. Another job under construction is the bridge across the Arkansas River at Fort Smith, Ark. This bridge has nine spans, each 192 feet long and is to be used for steam and electric traffic. Two other bridges are being constructed by the same firm, one spanning the Choctawhatchie River at Caryville, Fla., and the other across the Appalachicola River at River Junction, Fla. Several contracts are being carried on in Nashville by the company, one for the Tennessee Chemical Co. in West Nashville. Another one of the most important is the Turkish Bathhouse and Barber Shop building on Sixth Avenue, near Church Street. C. A. Ferguson is the architect.

T. L. Herbert & Sons are furnishing the material for the extension of the Marathon Motor Works. They are also furnishing the plastering for this job.

John Mueller, of Lockland, a suburb of Cincinnati, Ohio, is going to build a large office, warehouse and elevators.

The W. H. Hill Lime & Cement Company, of East St. Louis, Ill., has changed its name to the Hill-Thomas Lime and Cement Company.

The W. E. Terry Lumber Company has sold its yard at Mt. Pulaski, Ill., to J. M. Rothwell. H. C. Merrill, who was manager for the Terry company, there, has gone to accept a similar position at Roseville, Ill.

The August Witt Company, of Chicago, Ill., has been incorporated with a capital stock of \$2,500 to do general contracting. The incorporators are Jerome J. Cernak, James S. McClellan and Henry H. Witt.

The Central Illinois Construction Company, of Aurora, Ill., has been incorporated with capital stock of \$2,500, to do general contracting. The incorporators are George E. Ackerman, N. W. Evans and John M. Raymond.

The Booth Column Company, of Toledo, Ohio, has been incorporated with capital stock of \$35,000, to deal in building materials. The incorporators are W. S. Booth, H. J. Ellis, J. A. Kerkle, R. A. Landers and G. W. Wakefield.

The Fellgren Construction Company, of Chicago, has been incorporated with capital stock of \$50,000; to do general contracting and construction business. The incorporators are Charles W. Fellgren, William E. Lombard and Bernard L. Lee.

## MEMPHIS AND THE SOUTHWEST RETAILERS.

Memphis, Tenn., April 20. The flood situation that has prevailed in Arkansas, Mississippi and southwest Kentucky has had a tendency to retard building in all this section for about ten days. No damage has been done to mention in Memphis, the overflow here being confined to only a few blocks on the north limits of the city and beyond a little culvert work that will follow nothing will come of it here. Some of the neighboring Arkansas towns, when the waters, now falling, fully subside, will be compelled to have much work of a building nature. Concrete floors are sure to go in in many towns, for oftentimes where no wash away occurred business houses were covered floor deep in water. In the matter of levee reinforcements and concrete work along the river, the water of 1912 will suggest much of that from private and governmental sources.

Michael Larkin, of the M. Larkin Co., a pioneer contractor and concrete operator of Memphis, died on the 13th inst. at his home in this city. He built the Byrd building, corner of Main and Madison, and did much municipal engineering. The last few years he gave chief attention to concrete construction.

Memphis building last month showed expenditures of \$499,316, a gain of 3 per cent over March of the year before.

Chas. R. Miller, president of the Builders' Exchange, of Memphis, states that the season just opening promises to be excellent: "Practically all of the contractors have a good lot of work ahead and several of them just as much as they can attend to for some time to come. All we need now is fair weather and enough labor to carry out the work contracted for. This year is going to be a great building year for Memphis," said Mr. Miller.

The Wilson Concrete Co., lately entering upon incorporated form at Dyersburg, Tenn., reports spring prospects bright.

The immediate construction of a concrete arch viaduct over the tracks of the Nashville, Chattanooga & St. Louis R. R. and the Cincinnati Southern at Chattanooga, Tenn., has been approved here by plans of the two roads, the city and the Chattanooga Railway & Light Co. The cost is to be \$126,000.

## MOBILE RETAILERS.

Mobile, Ala., April 16.—Radcliff Bros. nine years ago founded the business of the Southern Fuel & Material Company, located at the foot of Palmetto street, Mobile, Ala. Four years ago it was incorporated and the officers of the company are: R. H. Radcliff, president; J. S. Radcliff, vice-president, and S. L. La Vergy, secretary and treasurer. This is the largest concern in this city handling a complete line of builders' supplies. It sells Lehigh Portland cement; plaster of the American Cement Plaster Co., of Lawrence, Kans.; "Eureka" lime of the O'Neal Lime Works, of Calera, Ala.; sewer pipe, fire brick, flue lining, wall coping, fire clay, of the St. Louis Clay Products Co.; metal lath,

etc., of the Trussed Concrete Steel Co., Detroit, Mich., and the Northwestern Expanded Metal Co.; the universally known waterproofing of Toch Bros., New York City; common and pressed brick of the Brookhaven Pressed Brick Co., Brookhaven, Miss., and all builders' supplies needed by contractors and builders.

The company is a heavy producer and operator in sand and gravel, getting this material out of the Bigbee river, 100 miles from Mobile. It owns and operates three powerful dredges equipped with ten-inch centrifugal pumps, installed by the Morris Machinery Co. The capacity of each dredge is 700 yards of sand a day. It operates eight barges which hold 300 yards of sand each, and uses one tugboat for its sand business. Its market for this sand and gravel is in Mobile, adjoining territory and all along the Gulf Coast to New Orleans. Mr. Radcliff reported business very good last year, with indications for a fair business the coming season. Its warehouse is constructed of corrugated iron, with concrete piers for foundations, and is practically fireproof. A switch track from the Louisville & Nashville railway runs through the grounds by the warehouse, giving the company the best of railroad transportation facilities. It owns and operates thirty teams for hauling material to jobs in various parts of the city.

The Mobile Coal Company operates a yard at the foot of Charleston street, with a frontage of 700 feet on the Mobile river and switch tracks running into the yard from the Louisville and Nashville railroad. As its name indicates, its principal business is that of handling coal, but it also handles Atlas Portland cement and the product of the Dixie Portland Cement Co., of Chattanooga, the United States Gypsum Co.'s plasters, and lime of the Longview Lime Works, of Alabama. Sewer pipe of the Southern Sewer Pipe Co., Birmingham, Ala., metal lath, fire brick, fire clay and flue lining. This company reported business in building material poor last year.

## CHATTANOOGA RETAILERS.

Chattanooga, Tenn., April 17.—T. T. Wilson, dealer in builders' supplies, with offices at 1127 Market Street, Chattanooga, Tenn., is the oldest house in this line without change of name in firm. It was established in 1884. His warehouse and yard is located on Neuby Street, and the Southern Railway tracks. The storage capacity of the warehouse is 20,000 barrels of cement. A switch track runs from the Southern Railway into the yard. Mr. Wilson owns and uses twelve teams for hauling material to jobs and in busy season hires as many more. He handles exclusively the Royal brand of cement of the Dixie Portland Cement Co., of Chattanooga, Tenn.; plaster of the United States Gypsum Co., and the Acme Cement Plaster Co.; lime of the Gager Manufacturing Co., and the Southern White Lime Co., of Tennessee. Sewer pipe of the Chattanooga Sewer Pipe & Fire Brick Co.; mortar colors of the Chattanooga Paint Co., fire brick and fire clay of the Aetna Fire Brick Co., of Oak Hill, Ohio; Keen's cement finishes; wire lath of the General Fireproofing Co., of Youngstown, Ohio; reinforced concrete goods of the Steel Protected Concrete Co., of Philadelphia, Pa., wall plugs of the Berger Manufacturing Co., Canton, Ohio; roofing of the D. M. Wing Paper Co., Cincinnati, Ohio; wood, lath, coal and a full line of builders' specialties. Mr. Wilson reported business very good last year and says indications point now to much brighter prospects for the opening of the coming season.

The Hibbler-Barnes Co., one of the largest firms dealing in builders supplies in Chattanooga, was incorporated in 1907. Its officers are: Robert Hibbler, Jr., president; J. R. Barnes, vice-president; N. W. Eastland, secretary and treasurer. Its office and yard is located at 700 E. 10th Street. Another yard is operated at Ridgeville, corner Anderson and Dodge Avenues. Both yards are on the Belt Railway line of Chattanooga and each has two switch tracks running into the yards; the one at E. 10th Street, accommodating fifteen freight cars and the switch track at Ridgeville accommodating four cars. The storage capacity of the warehouses in both yards is approximately 5,000 barrels of cement and plaster. It employs twenty teams for hauling its material to jobs. It deals extensively in Portland and Louisville cements; plaster of the American Cement Plaster Co., Acme Cement Plaster Co., and the United States Gypsum Co.; lime of the Southern White Lime Co., and the Jesse Allen Lime Co., of Burns, Tenn. Mortar colors of the Chattanooga Paint Co., and the Lookout Paint Manufacturing Co., Chattanooga, Tenn.; metal lath and corner beads, from Roger-Shear Co., Warren, Pa., and the Berger Manufacturing Co., of Canton, O.; roofing of all kinds; fire brick, and fire clay of the Louisville Fire Brick Co., and Ladd Brick Co.,



OFFICE AND WAREHOUSE BARNES BROTHERS COMPANY, CHATTANOOGA, TENN.

Fort Wayne, Ala., besides a full line of other builders' supply specialties. Mr. Eastland reported business good, with fine prospects for the coming season.

The Barnes Bros. Co., at 700 East Ninth Street, one of the prominent retailers of builders' supplies, was established in 1892. W. W. Barnes is the owner and manager of this business. Its yard runs from 9th to 10th Street and is on the Southern Railway, with elevated switch track running through the yard. The storage capacity of its warehouse is approximately 5,000 barrels of cement. It handles cements of the Atlantic & Gulf Portland Cement Co., of Raglan, Ala., and the Dixie Portland Cement Co.; plasters of the Acme Cement Plaster Co., J. B. King & Co., of New York City, and the Southern Gypsum Co., having the exclusive agency of the last two named firms. Metal lath of the Gary Iron & Steel Co., Cleveland, Ohio; fire brick of the Harbison-Walker Refractories Co., Pittsburgh, Pa.; mortar colors of the Chattanooga Paint Co.; sand, gravel and crushed rock, and composition roofing of the United Roofing Co., Philadelphia, Pa., and other builders' specialties. Business was reported fair last year and indications for the coming season believed to be exceedingly bright. W. W. Taylor, assistant manager, said: "There is more building going on this year in Chattanooga than in the last four years, especially in its 'residence districts.'"

F. B. Sloan and D. P. Montague form the firm of Sloan & Co., at 819 Broad St., Chattanooga, Tenn. Mr. Montague has been identified with the clay products industry for more than forty years and has been a member of the present firm for the last five years. They operate four distributing yards and warehouses. Their eastern yard at McCalle Avenue and Viaduct on the Queen & Crescent Railroad, with switch track running into it, accommodates eight freight cars. Their central yard is at Boyce and 12th Streets with a switch track accommodating eight freight cars running into it from the Nashville, Cincinnati and St. Louis Railroad. The Northern yard in the north section of the city, is located on Water and Price Streets, with a switch track running into it from the Belt Railway line of Chattanooga, Tenn. Their southern yard is located at West 25th and River Streets on the North Carolina and St. Louis Railroad, and the Belt Line at Chattanooga. The sand and gravel department of this firm operates under the name of the Chattanooga Sand & Supply Co., and owns two steam boats and seven barges; one of these boats is a dredge and a two boat combined. Sand is gotten from the Tennessee River which controls the sand situation here. They own and operate in their various yards, fifteen teams and hire as many more during the busy seasons for the hauling of builders' supplies from their different yards to jobs in various parts of the city. The combined storage capacity of their warehouses is approximately 15,000 barrels of cement, plaster, lime, etc. They handle cements of the Lehigh Portland Cement Co., and the Southern States Portland Cement Co.; plaster of the Acme Plaster Co.; lime of the Gager Lime Manufacturing Co.; sewer pipe, fire brick and fire clay; mortar colors from the Chattanooga Paint Co.; metal lath from the General Fireproofing Co., Youngstown, Ohio. All kinds of fancy faced Eastern brick; hydrated lime from the Chickamauga Cement Co., and manufacture common brick in two yards in Southern Chattanooga, which have an output of twenty million of brick a year. Mr. Sloan reported business fair and indications exceedingly bright.

The Chrisman Construction Company, Chrisman, Ill., are to build several business buildings of cement blocks in that city. Their first structure will be 50x80 feet, which soon will be duplicated. This company manufactures all kinds of cement products.

The Mortell Manufacturing Company, of Kankakee, Ill., has been incorporated with a capital stock of \$15,000 to manufacture cement products. The incorporators are James W. Mortell, Edward Moriarty and Frank P. Somers.



"LOUIE" MOSS ON HIS WAY BACK TO MEMPHIS.  
Courtesy of "The Lehigh."



## BIRMINGHAM RETAILERS.

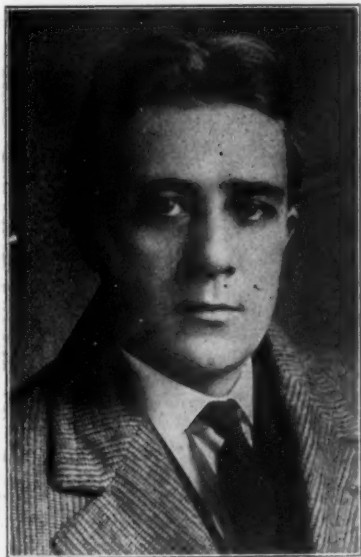
Birmingham, Ala., April 15—Builders supply retailers, contractors and architects who are thoroughly conversant with conditions in Birmingham, predict that this will be the greatest building year the city has experienced in a decade. Building operations this year will include immense business blocks, hotels, warehouses and churches. The Roden Hotel and a synagogue on Highland avenue and Twenty-first Street, are among the more important buildings to be started and completed. Another great hotel, and more than a dozen large structures in the business center of Birmingham will take shape and form before the spring season closes. Builders supply firms are already making preparations to supply the vast amount of building material required in these operations before the fall season closes, and are naturally expecting the busiest times this summer that they have had for many years. Prospects undoubtedly are more bright for the most prosperous conditions in building lines here.

The Kirkpatrick Sand & Cement Company, with offices in the Woodward Building, started business here in 1886. It operates one yard at Powell Avenue and 24th Street, and one at Avenue B and 25th Street. The latter is the largest yard in the city. Three switch tracks from the Seaboard Air Line Railway and the Southern Railway run into this yard. The storage capacity of the warehouse in the Powell Avenue yard is twelve thousand barrels of cement. This company handles the entire output of the Atlantic and Gulf Portland Cement Co., of Raglan, Ala., plaster of the American Cement

The Jefferson Brick & Supply Company, located at the corner of Avenue A and 21st Streets was incorporated in 1908 and its officers are: Ed. Hiller, president and treasurer; Thomas H. Simms, secretary and general manager. Its yard fronts the Birmingham Belt Road. It handles the product of the Dixie Portland Cement Co., the Southern Cement Co., of Birmingham and Best Bros., Keene's cement, Plaster of the Electric Plaster Co., of Blue Rapids, Kansas, and the Southern Gypsum Co.'s product of Saltville, Va. Plaster finishes of the Great Western Company of Blue Rapids, Kansas, Shelby County Lime of the Bowden Lime Works, and hydrated lime of the Longview Lime Works, Birmingham, Ala.; sewer pipe of the Southern Sewer Pipe Co., of Birmingham, Ala.; wall tile and waterproofing of the North Birmingham Firebrick and Waterproofing Co. The company is agent for the fire brick of the Harbison-Walker Refractories Co. The company owns sand pits eighty-five miles from Birmingham, operating a steam shovel with clam bucket, having a capacity of from eight to eighteen cars of sand a day, part of which is distributed from its yards in Birmingham. The Chattanooga Paint Co. furnishes the company with its mortar colors and the Ebersson Paint Co., of St. Louis, Mo., with its paints. It handles common and pressed brick of the Sibley-Menge Brick & Coal Co., Birmingham, Ala., Copeland-Ingis Shale Brick Co., and A. G. Kahn Brick Co., of Selma, Ala. The company found business fair last year and reports that prospects for great activity in the building lines are more than promising this coming season. It also reports that the demand for brick is greater than the supply.

The Carolina Portland Cement Company with offices and yards at Avenue A and 16th Street, were opened here fifteen years ago. A switch track from the Seaboard Air Line Railroad accommodating six cars runs into the yard close to its warehouse, making its railroad facilities for shipping, most excellent. The company handles the "Standard" its own brand of Portland cement; plaster of the Acme Cement Plaster Co., of St. Louis, Mo.; lime of the Keystone Lime Co., Keystone, Ala.; sewer pipe, wall coating, etc., from the Southern Sewer Pipe Co., of Birmingham, Ala.; fire brick and fire clay from the Bessemer Fire Brick Co., Bessemer, Ala.; metal lath of the Northwestern Expanded Metal Co., of Chicago, Ill.; asbestos products of the Sall Mountain Asbestos Co., Chicago, Ill.; sand and gravel which they get from their own sand and gravel pits, some of which are on the Central of Georgia Railroad; the Louisville and Nashville Railway and the Southern Railway. It carries a full line of roofing slates of E. J. Johnson; New York City; common and pressed brick; waterproofing. Hydrate of A. C. Horn & Co., New York City, cold water paints, their own brand; columns for porches, of J. R. Pease & Co., Berwick, La.; corner beads of Rogers-Shear Co., Warren, Pa.; creosote imported from Germany; deadening felts of the Hines Manufacturing Co., Chicago, Ill.; oak and maple flooring; mortar colors of the Chattanooga Paint Co. The company also has a complete sheet metal department in connection with its yard. W. W. Snear, manager of the Birmingham branch, reported business just fair last year, but said that it looks to him that this year will be a very active one in building material lines.

Plaster Co., of Lawrence, Kansas; Kirkpatrick's "White Diamond" lime, its own manufacture, and the well-known brand "Tredegar" of the Anniston Lime & Stone Co., of Alabama. Sewer pipe, flue lining, etc., of the Southern Sewer Pipe Co., of Birmingham, fire brick of the Bessemer Firebrick Co., Birmingham, Ala., metal lath of the General Fireproofing Co., Youngstown, Ohio; pressed brick of the Sibley-Menge Pressed Brick Co., of Sibleyville, Ala., with a full line of foundry supplies, made by Obermeyer & Co., Cincinnati, Ohio; sand and gravel and crushed rock. The company owns sand pits at Coosade, Jackson's Lake, Fremont, Gate City, Glen Ellyn, Ala., Howard, Junction City and Bull Creek, Ga. All these sand pits are located on the great railroad systems running through these two states, which gives them the most excellent railroad facilities for shipping the sand which is largely used for molding purposes in foundries. The company owns and operates five locomotive cranes, the daily capacity of which is thirty-two hundred yards of sand and gravel. This firm found business last year fairly good and it is reported that this year opens up exceedingly promising. The officers of the company are: J. V. Kirkpatrick, president; C. F. Willichen, treasurer and general manager; R. N. Hawkins, secretary; H. M. Blanchard, manager of sales department, and A. Mohan, manager foundry supply department. The company confines its business operations to Georgia, Alabama, Florida, Mississippi, Louisiana, Tennessee and South Carolina.



J. I. McCANTS, SALES MANAGER STANDARD P. C. CO.

land cement on the market. The convenience of this great plant at Leeds, for supplying the cement required in the Birmingham district on public and private improvements, has been practically demonstrated of having been of the greatest benefit. The offices of the sales department were established in the Brown Marx building, two years ago and are in charge of J. E. McCants, sales manager, who is giving special attention to the development of the company's business in the Birmingham district. Mr. McCants reported that business last year had been very satisfactory and that prospects for the coming season are exceedingly promising.

## LATEST INVENTION.

E. R. Stapleton, sales manager of the Western States Portland Cement Company, recently sent us the following communication with inclosure, which we are reprinting below:

"Our mutual good friend, Percy H. Wilson, has written us several letters recently with reference to photographs, etc., on the new uses of Portland Cement, having received two from him this morning. We suppose he wants these pictures for the Publicity Committee.

"We do not know whether or not you have seen this new invention requiring a considerable quantity of Portland cement, but we are enclosing you a sheet of the Southwest American, published at Fort Smith, Ark., Wednesday morning, February 28th, 1912, in which you will find the picture of this new invention, together with printed matter as to its use.

"It might be well for you to get the specifications for the benefit of inquiring friends. I have mailed one copy of this paper to Mr. Wilson, for use of the Publicity Committee."



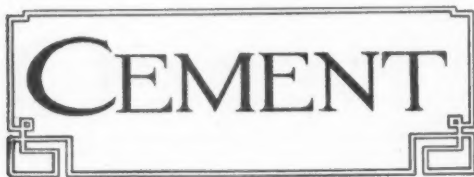
LATEST INVENTION GREAT.

Smart Inventor: "That, sir! is the greatest fly-trap ever invented. You see, you bait the hook and wait until dark. Up comes a fly and climbs the long ladder; when he gets to A he touches a spring and switches on the light, sees the bait and crawls down for it; when he gets to B he touches another spring and out goes the light. He goes back and turns to the right to go down the short ladder, doesn't see the rungs missing, falls on the block of concrete and breaks his blamed neck!"

Frank H. Hahn and Chester Cox, who recently formed the Cement Products Company, at Decatur, Ill., have rented the place on Wabash avenue formerly occupied by the city yards.

The M. J. McGrath & Son Company, of Cleveland, Ohio, has been incorporated with a capital stock of \$10,000 to do concrete construction. The incorporators are M. J. McGrath, E. E. McGrath, Anna McGrath, E. P. Strong and H. J. Roan.





## Association of American Portland Cement Manufacturers

Meets Semi-Annually.

### OFFICERS

Edward M. Hagar.....	President
W. S. Mallory.....	Vice-President
John B. Lober.....	Treasurer
Percy H. Wilson.....	Secretary
R. W. Kelley.....	
T. H. Dumary.....	
John B. Lober.....	
Whitney Newton.....	
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John R. Morron.....	
Chas. H. Zehnder.....	
Bethune Duffield.....	
W. S. Mallory.....	
Edward M. Hagar.....	
R. W. Lesley.....	
Frank E. Tyler.....	
Conrad Miller.....	

Executive Committee

### MEETING POSTPONED.

The regular semi-annual meeting of the Association Portland Cement Manufacturers, which was announced in the last issue of ROCK PRODUCTS as going to take place April 8 to 11 has been postponed to May 6 to 9. The meeting will be held at the La Salle Hotel, Chicago, as originally planned and there will be no change in the program as previously announced. The first and second days will be given over to the regular committee meetings. The regular business session and banquet will be held the third day and the fourth day will be devoted to road work.

### BRAZILIAN CEMENT INDUSTRY.

(From our own Correspondent.)

London, March 26.—The British consul at Sao Paulo reports that, with a view of encouraging the establishment at that place of a factory for the manufacture of cement, the State Legislature has passed a decree guaranteeing interest at the rate of 6 per cent per annum, for a period of thirty years, upon a maximum capital of \$500,000, to be devoted to that purpose. The proposed factory must have a capacity for an output of not less than 200,000 barrels of about 379 pounds each, annually. Only material of local origin may be used in the manufacture of the cement.

### Three More Firms Enter British Cement Combine.

An important amalgamation is announced in the cement-making business, the British Portland Cement Manufacturing Company, of London, having taken over the works of Addison Porter & Son, of Willington Quay, Cameron Swan & Partners, of Jarrow, and J. C. Johnson & Co., of Gateshead, all old-established firms. Mr. Potter will join the board of the London Company, and Johnson & Co. will be the Northern agents.

### ARE NOT DISCOURAGED.

A prominent cement manufacturer said to a representative of this paper a few days ago:

"It has recently been brought to our attention that the rights to use the Thomas Glazed Cement Sewer Pipe Machine in the state of Washington have been bought up by the clay pipe interests. Evidently their campaign to discredit the use of concrete sewer pipe by circulating broadcast literature knocking cement pipe has not accomplished its purpose in that part of the country and it has become necessary for them to resort to still other means for preventing the use of cement pipe.

"On account of the higher cost of vitrified clay sewer pipe in the west, machine made cement sewer pipe have been used extensively since bell end cement sewer pipe machines were put in operation in that market.

"The purchase of the territorial rights of one such machine will not materially discourage the manufacture of this kind of sewer pipe as there are several of these machines on the market which will undoubtedly be installed."

We are in receipt of a letter from Robert F. Wentz, Allentown, Pa., who states that he is building a 6,000-barrel cement plant in England, and equipping it with American machinery.

### WILL USE KNICKERBOCKER.

A recent important contract, awarded at Lynn, Mass., was that which was given to W. C. Whittredge & Co. for 10,000 barrels of cement to be used in the improvement of the streets of that thriving city. The bids were submitted some two months ago, the Whittredge concern's being the lowest; but as the engineering department officials desired a demonstration of the merits of the Knickerbocker brand of Portland cement handled by the Whittredge company, a thorough test was made, after which the officials were so favorably impressed that they permitted its use in the construction of the Breed's pond dam at that point.

### CARLOAD LOTS.

For many years it has been the custom of dealers to place their orders for carloads of cement in round numbers, such as 100, 150, 200, or 250 barrels, says "The Universal Dealer," published by the Universal Portland Cement Company. None of these figures, however, represents a carload. Every dealer knows that box cars are built and marked with a certain capacity. These capacities are 40,000, 50,000, 60,000, 80,000 and 100,000 pounds. There used to be a 30,000-pound car, but none of these have been built for years, and this size no longer is an element in transportation problems. Even the 40,000 and 50,000-pound capacity cars are very scarce and rapidly disappearing. The maximum load which can be placed in any car is ten per cent in excess of its marked capacity.

It is a well recognized fact that the railroads in the United States for the last three years have purchased only such cars as necessity compelled them to buy. Furthermore, many of them have permitted their rolling stock to reach a bad state of repair and have done but little to restore it to usefulness. The result is an actual deficit in this country of several hundred thousand box cars in the number required properly to handle the country's freight.

The duty, therefore, of extracting from every car its maximum service is apparent to all. The railroads quite reasonably dislike to have their cars loaded below capacity, because this reduces pro rata the efficiency of the available rolling stock. In other words, if a car which will hold 280 barrels of cement is loaded with 150 barrels, there remains 130 barrels of wasted room in the car, and to waste room in box cars today is little short of criminal. For the information of our dealers, therefore, we publish the following table of carloads of cement:

Marked Capacity of Car.	Maximum Load.
40,000 lbs.....	115 bbls.
50,000 lbs.....	140 bbls.
60,000 lbs.....	170 bbls.
80,000 lbs.....	230 bbls.
100,000 lbs.....	280 bbls.

Railroad tariffs in different territories provide different minimum weights for carload shipments of cement, ranging from 38,000 to 50,000 pounds, and in the case of certain short hauls, the minimum is 60,000 pounds.

If the dealers will bear these figures in mind when ordering cement and will specify quantities corresponding with the above specified maximum loads and, of course, subject to the minimum weight restrictions applying in their respective territories, it will materially assist the railroads and the manufacturers, and greatly facilitate the movement of freight.

Every car that is loaded to less than capacity imposes upon some other car an undue burden. An accumulation of such burdens means that from 50 to 100 per cent more cars are required to do a given amount of work than would be necessary if all the cars were loaded to the limit of their carrying capacity.

Further than this, everyone owes it as a duty to the public at large, to assist in conserving the existing car supply to the greatest extent possible.

The following paragraphs will make clear how maximum service can be obtained from the available car supply:

"One car, any size." This is the way we would like to have an order read when it is immaterial to the dealer whether he gets a car of the minimum weight prescribed in the railroad tariff, or the largest car which may be available, loaded 10 per cent in excess of its marked capacity.

"One car not to exceed 170 barrels." This is the way an order should read when a car ranging from minimum to 170 barrels is what is wanted. In this case we can use a 40,000, 50,000 or 60,000-pound car, whichever is easiest obtainable, and load it to the maximum.

"One car, 170 to 280 barrels." An order reading in this way will enable us to use either a 60,000, 80,000 or 100,000-pound capacity car.

It is impossible to overestimate the importance of this matter, and until the railroads equip themselves with sufficient rolling stock to perform the work they are called upon to do, no dealer should order cement in other units than the above mentioned carload lots. Our dealers are urged to give this matter careful study and to properly instruct their employees who may have to do with placing shipping instructions. Co-operation between the shipper and consignee along these lines will be of marked benefit to both parties as well as to the railroads and other shippers and consignees. Let us, therefore, forget the old, familiar and convenient figures—100, 150, 200 and 250 barrels—and substitute therefor the proper and logical figures—115, 140, 170, 230 and 280 barrels.

### NEW YORK CEMENT NEWS.

New York, N. Y., April 16.—The local cement market has revealed a strengthening undertone, and dealers report also that there is an upward tendency noted in prices. Large stocks of cement were disposed of in the local market, and manufacturers report that more cement has been sold at the present time than during the same time last year. The outlook is bright and dealers expect the demand to improve as the season progresses. The news of the merger of fifteen western cement companies, as reported in detail in the last issue of ROCK PRODUCTS, was received with a considerable amount of interest in the local trade, although on the whole it was anticipated. Commenting on this report the president of one of the oldest cement companies operating in the local market said: "The news does not surprise me for such a step has been in contemplation. I understand for over a year the companies out there have been cutting each others throats in ruinous competition, in many instances selling cement at 10 cents and 15 cents per barrel below cost in the effort to freeze out their competitors. This merger, however, will not affect the local market. We are now selling cement at 65 cents and 75 cents per barrel at mill, but our rates may soon go up on account of the high price of coal. We used to buy our coal at 75 cents per ton and now we have to pay from \$4 to \$5 per ton. The price of \$1 per barrel for cement, fixed by the western combine is most likely due to the coal famine, for I have heard that some of the mills have less than a month's supply of coal on hand."

These views were confirmed in a statement obtained from J. W. Alker, vice-president of the Pennsylvania Cement Company, who said when questioned as to the probable effect of the western merger on the eastern market: "It will not affect our prices at all. Business in our line is rather dull just now, and this fact together with the rise in the price of coal has caused many of the mills in Pennsylvania to suspend operations for the present."

Harry A. Brocas, of the Lehigh Portland Cement Company, in reviewing the local cement market during the past month, stated: "The local outlook of the cement market has improved and there is an upward tendency noted in prices. We have done a good amount of business during the past month and we expect the demand to become heavier as the spring progresses. Although we do not expect a boom year we are optimistic as to the future, and we are going to sell 'some' cement. Prices remain firm."

John R. Morron, president of the Atlas Portland Cement Co., who recently returned from a three months' trip, said that the Atlas mills in the Pennsylvania district are not operating under normal conditions along with other plants in that section, but, he stated, the company's mills at Hannibal, Mo., and Hudson, N. Y., are much busier than they were this time a year ago, with a more encouraging outlook, due to the better prices obtainable.

Commenting on a recent announcement of a merger of western companies, Mr. Morron said: "Considering the present condition of the cement industry amalgamation is perhaps the best remedy. It would be a good thing if some of the big eastern companies could unify their operations on a more economical basis, but the present attitude of the Government at Washington toward big business is such as to discourage an undertaking of the kind in the near future."

While I was in Europe it was gratifying to note that the central governments fostered large enterprises. Over there the head of a large industrial corporation is very often knighted, while here he is indicted."

A suit against the California Portland Cement Company, operating at Colton, Cal., which was brought by orange growers, who complained of damage from dust, was recently decided in favor of the company.

# METHODS AND APPLIANCES FOR PREVENTION OF ACCIDENTS IN CEMENT PLANTS

By J. G. BERGQUIST

We have given this problem much thought and study, and in working out a system we have had a great deal of both inspiration and advice from the steel mills, especially from the south works of the Illinois Steel Company, and from the bulletins issued by the General Safety Committee of the United States Steel Corporation.

The cause of an accident is either unsafe conditions, or carelessness on the part of the workman. Hence, the remedy resolves itself into

1st: The safeguarding of dangerous places, so that any man exercising ordinary care is not required to take any risks in the performance of his duty, and

2nd: To promote carefulness throughout the whole organization. This is by far the more difficult to accomplish and requires systematic and persistent effort on the part of the management.

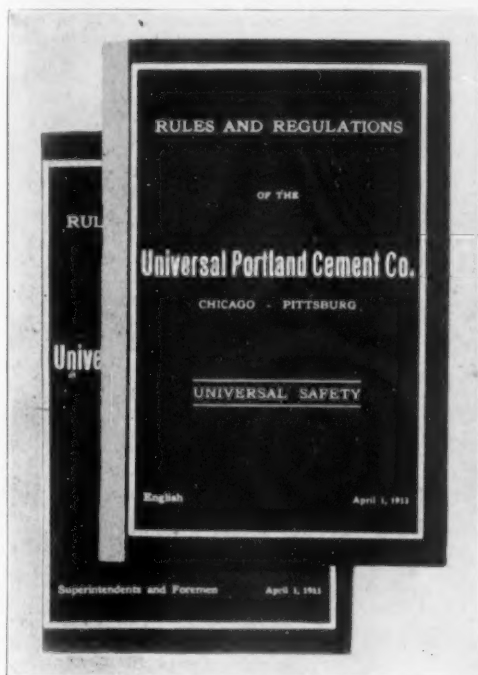


ILLUSTRATION A.

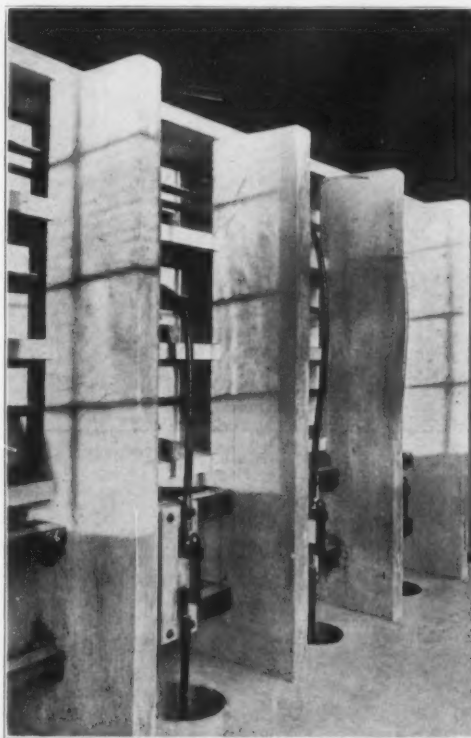
As a basis for this work we give each employe a Book of Rules and Regulations, to which I shall refer later. This picture shows the cover of the books.

The working out of safety appliances has been a somewhat gradual development, and after having been tried out in one plant the same has been adopted in other plants, thereby making all the plants similar. I shall, therefore, show some views from our plant No. 6, located at Buffington, Indiana. This plant has just been completed and is therefore quite up to date, according to our experience of what constitutes the safety of men.



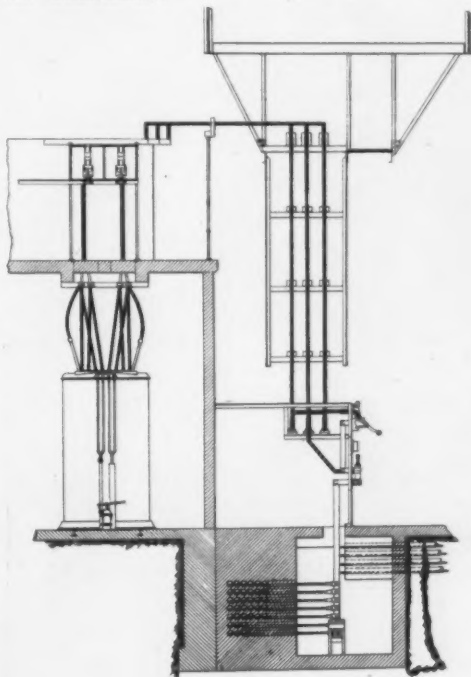
NO. 1.

Illustration number one shows 22,000-volt lines going into the Transformer Station, where the current is stepped down to 440 volts.



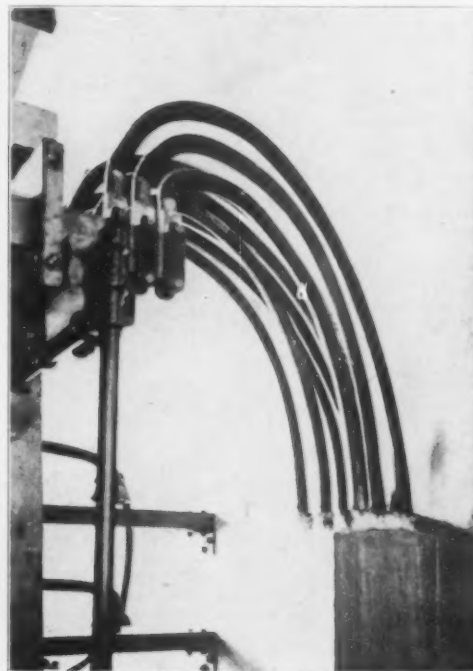
NO. 2.

Illustration number two shows an interior view of the building showing high tension lines in concrete barriers, on the second floor, going down to the transformers.



NO. 3.

Illustration number three is a diagram illustrating the 440-volt connections to the switchboard and the distribution through tunnels and conduits from the transformer station leading to the various mill buildings.



NO. 4.

Number four is an illustration of conduits in the transformer building inclosed in concrete to a point which is out of reach of the men, this picture showing connections near the ceiling of the first floor.

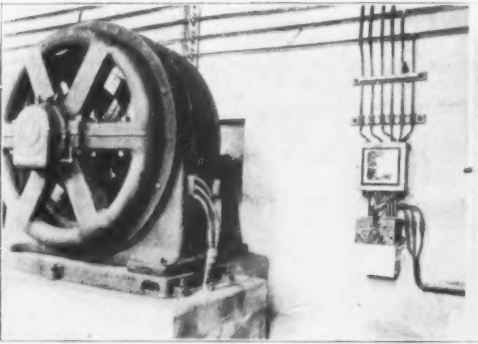


NO. 5.

Illustration number five shows a line of conduits inclosed in concrete, and a man-hole. This view was taken during construction before the grounds were leveled off, and when finished only the round man-hole cover will be visible above the ground. The power is distributed from the transformer station in a similar way to all parts of the plant, making an absolutely safe arrangement for the distribution of power.

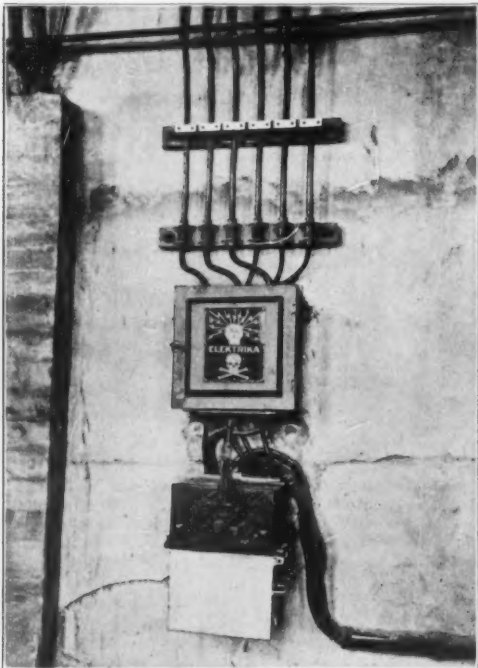
Illustration number six shows a typical arrangement of motor-drive with the wires coming up in conduit at the base of the motor, where connections are made through wood-covered connections. To the right can be seen an oil-switch and fuse-





NO. 6.

box, which is the only place where any man could come in contact with the current—hence we have a warning sign which is intelligible to all nationalities, and which is shown in the next view in a larger scale.



NO. 7.

Every motor throughout the plant is controlled by an oil-switch and an arrangement is provided for locking the switch in the open position with a padlock, as shown in this view. We have a paragraph in the Rule Book which reads as follows:

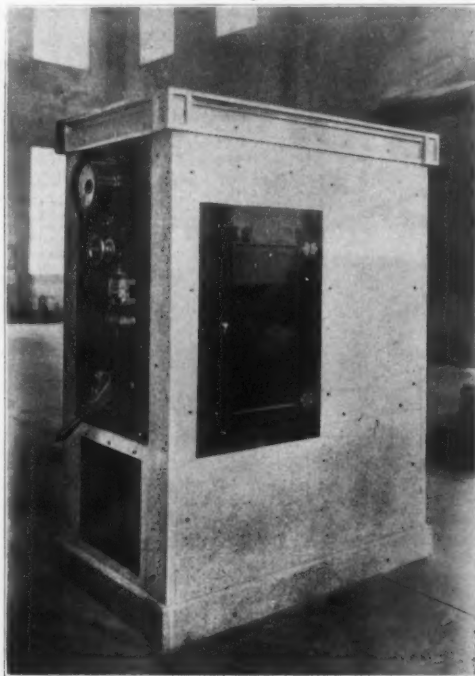
"NEVER WORK ON A CRANE OR OTHER MACHINERY UNTIL YOU HAVE NOTIFIED THE OPERATOR AND ATTACHED A SAFETY PADLOCK, SUPPLIED BY THE COMPANY FOR THAT PURPOSE, BEARING YOUR CHECK NUMBER, AT THE POINT WHERE THE POWER IS TURNED ON."

This makes it impossible for anyone to start up the machinery on which a repairman has work to do until he is through and has removed his own padlock. If, for instance, an electrician and a machinist were working on machinery controlled by the same switch, there would be two padlocks on this switch so that the electrician, for example, would not depend on the machinist for his safety.

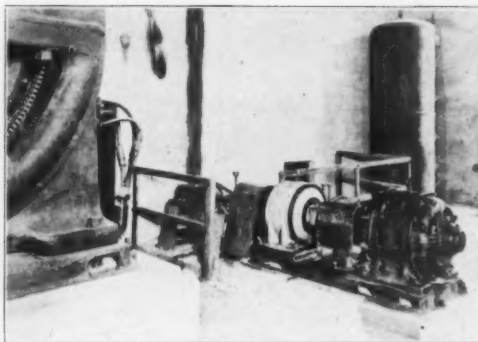
Illustration number eight illustrates a starting-panel for motor-generator set, completely inclosed in concrete slabs.

Cut number nine shows an illustration of conveyor drive which is direct connected through a guarded flexible-coupling, and the speed-reducing device completely inclosed and running in oil, where the speed is reduced from 720 to 60 revolutions.

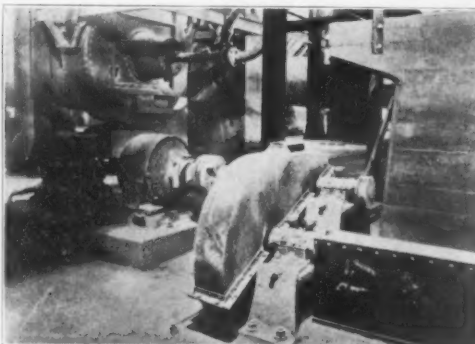
In this arrangement a great deal of risk to workmen is absolutely eliminated as compared with the old-fashioned drives of pulleys and belts and gears or chain-reductions, which are so well known in cement plants. This arrangement is not only perfect in regard to safety, but is much neater, more compact, and more economical to maintain.



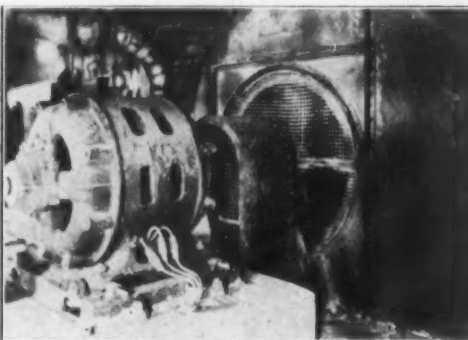
NO. 8.



NO. 9.



NO. 10.

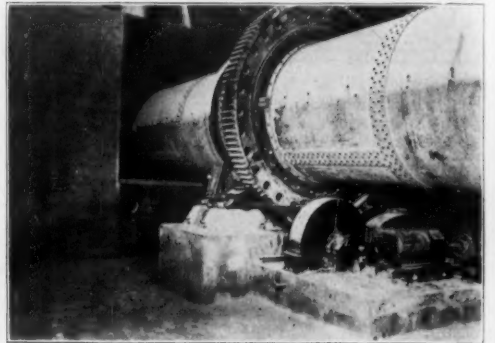


NO. 11.

This picture, number ten, shows a further gear-reduction, where slower speed is required, these

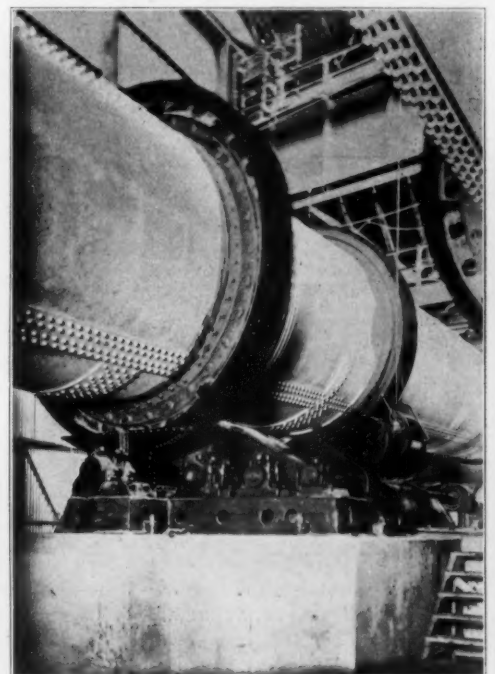
gears being entirely inclosed and accessible for lubrication and inspection through a cover on top of the casing.

Illustration number eleven shows a fan direct connected through flexible-coupling with motor. This is to illustrate the guard over coupling and air inlet to fan.



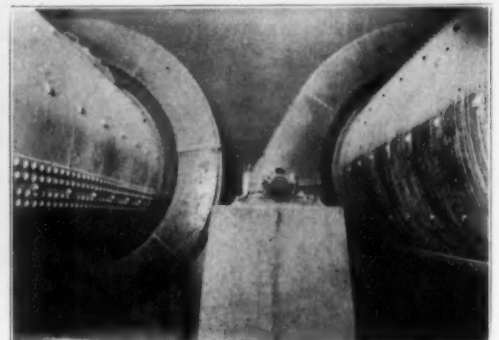
NO. 12.

Cut number twelve illustrates the inclosed driving arrangement for a dryer. The gear covers are all made tight and the gears run in oil. It will be noticed that the supporting rolls are also inclosed.



NO. 13.

Cut number thirteen gives an illustration of the kiln drive, showing the four gear reductions entirely inclosed. As the speed of the kiln is very slow, less than one revolution per minute, it did not seem necessary to inclose the roll supports, but the piping for the water-cooled bearing is so placed as to serve as a guard.

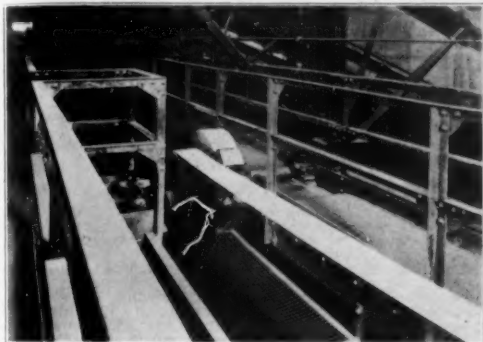


NO. 14.



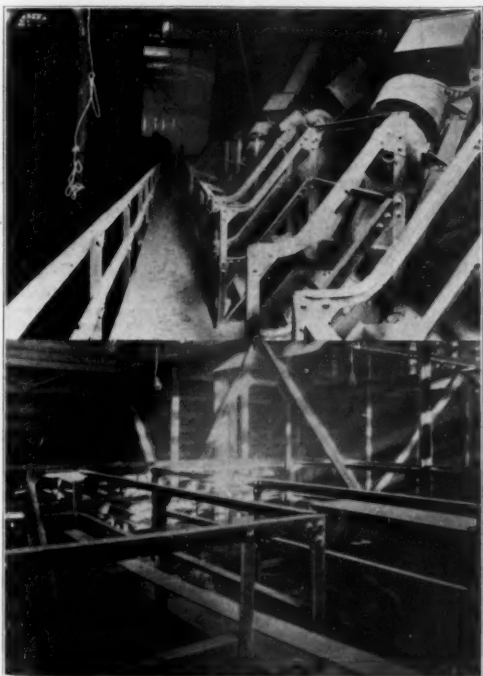
Illustration number fourteen shows a seven-foot tube mill gear completely inclosed. A cover directly over the pinion is provided for inspection and lubrication. The shaft extends through the wall, which is seen in the background, into a lean-to where it is direct connected with a slow-speed motor.

In the design of the plant, drive belts of any importance have been eliminated as being both dangerous and costly, and all shafting is so placed as to allow ample head-room or else is located on a floor or platform entirely railed off and inclosed.



NO. 15.

Illustration number fifteen shows a view of some overhead walks in a mill building, and a covered shaft on the platform, gear-guards, and a screen under the belt, which is placed there to prevent the belt from dropping to the floor below in case it should come off the pulley. Also note the toe-board on this walk—this is to prevent any material such as mechanics' tools from being accidentally knocked off the walk.



NOS. 16 AND 17.

Illustrations number sixteen, seventeen, eighteen, nineteen and twenty are some more views showing in a general way similar guards and railings.

This view, number twenty-one, shows a screen in the machine shop which serves to protect men from coming in contact with electric current conductors and a safe means of access to crane, is provided.

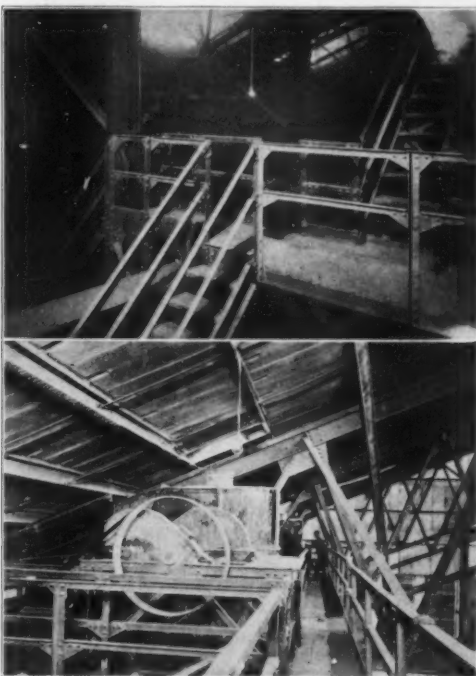
Cut number twenty-two illustrates the drive for machine shop line-shaft and attention is especially called to the belt-guard. In the background can be seen a corner of the wash-room for workmen.

This cut number twenty-three is to illustrate the safety-guard on lathes. These covers are made with hinged doors for accessibility, as shown in the foreground.

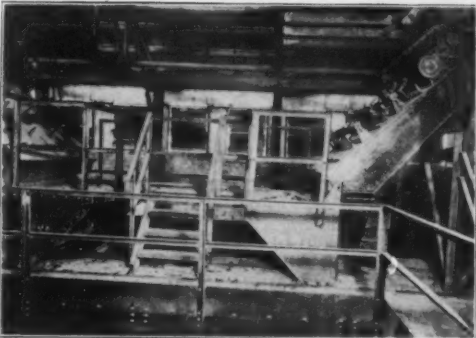
Illustration number twenty-four shows another guard in the machine shop, around a belt.

Cut number twenty-five is an illustration of a boring mill with all gears covered and the counter-weights inclosed in a pipe, accessible through hinged door.

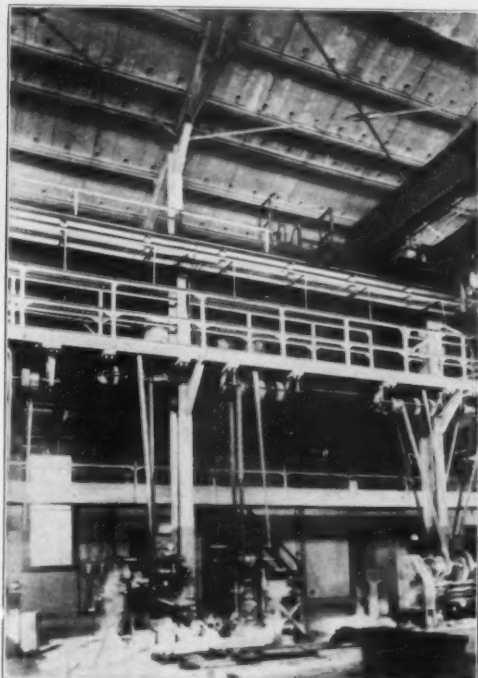
View number twenty-six gives an illustration of the benefit of safety-collars on emery wheels. This shows a broken wheel, but the piece is held in place



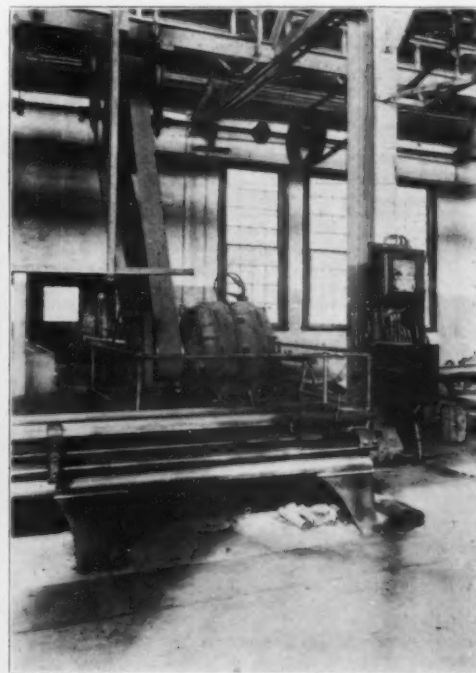
NOS. 18 AND 19.



NO. 20.



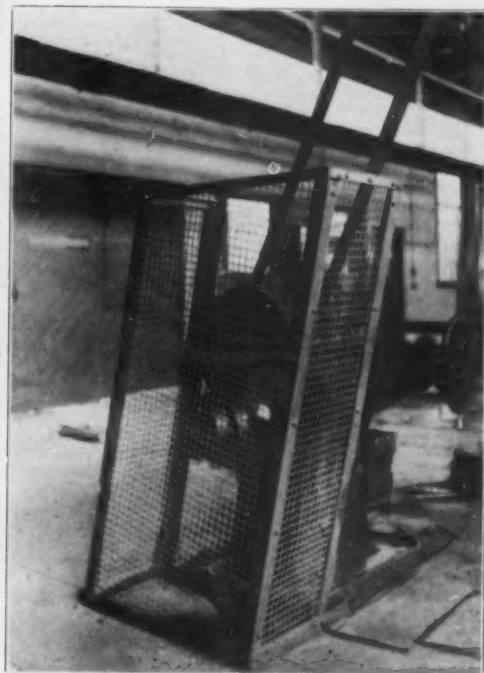
NO. 21.



NO. 22.



NO. 23.



NO. 24.

by the safety-collar, thus preventing what might otherwise have been a serious accident.

One of the dangers in cement plants is the explosion of dust in the atmosphere of the coal-grind-

(Continued on page 45.)

## QUARRIES

The Hammon Engineering Company has changed the power of its quarries near Eureka, Cal., to electricity.

The Conewago Trap Rock Company has been incorporated at Williamsport, Pa., with a capital stock of \$75,000.

The Roseville quarry near Harmony, Del., has been purchased by William Barnard, of Newark, N. J., and a crusher will be installed within the near future.

The Pennsylvania Paving & Construction Company, of Pittsburgh, has been formed by Theodore Myler, J. J. Ryan, Charles S. Rea and others of Pittsburgh, with a capital of \$100,000.

The Wagner Quarries Company has been organized at Sandusky, Ohio; capital, \$500,000. Michael, Alex. M., A. E. and Clarence E. Wagner and William Hendrickson are the organizers.

The Kelley Island Lime & Transport Company recently resumed operations in its quarries at Marblehead, Ohio, and an unusually busy season is predicted. The company has forty-seven men on its payroll at this point.

The Frazier stone quarry, of El Dorado, Kan., is expected to commence operations soon. Work is now being completed on a large storage warehouse to take care of the excess crushed rock. This plant was built a year ago and is well equipped.

Scott Burnett, who operates a large stone quarry near East Liverpool, Ohio, has secured the contract for removing 600 perch of stone for the \$100,000 Y. M. C. A. building at that place. Fifteen thousand cubic feet will be required for the building.

The McDermott Stone Company, of Portsmouth, Ohio, is making good shipments of stone right along now. It recently shipped forty carloads of scrap stone to the Pocahontas division of the N. & W. railroad. These will be used to replace rip-rap walls.

The Illinois Bureau of Labor was unable to compile statistics upon limestone quarries in the state as planned. Quarrymen refused to give the information asked of them in many instances and the answers received were no true guide to the extent of this industry.

The Consolidation Stone & Mining Company, of Pittsburgh, has bought the Ingham property near New Castle, Pa., for about \$100,000. The property includes extensive deposits of fine building stone and the quarries will be opened at once. The company reports much city work, but says that up to the present time apparently little has been actually awarded.

Among projected hard roads in Illinois are those at Somonauk, where ten miles of macadamized highways are to be built in the next five years; Spring Lake township, Tazewell county, where it is hoped to build fifteen miles in the next fiscal year, and Bowder township, Douglass county, where voters approved a plan to construct twenty-five miles of highways. A \$50,000 bond issue will be necessary at the latter place.

The Milwaukee commissioner of public works has awarded the contract for the season's requirements of crushed stone to the Wisconsin Stone Company. An aggregate of 38,000 cubic yards will be furnished the city at these prices: One dollar and twenty-two cents a yard for the west division of the city; \$1.23 for the east division and \$1.24 for the south division. The price for the west division stone is one cent cheaper than last year.

The Mountain Quarries Company, a subsidiary of the Pacific Portland Cement Company, which has been working for several years on a large lime rock quarry at Cool, in El Dorado county, California, now has its outfit in full operation. The railroad was completed last month, and the first shipment of lime rock, twenty-one cars, was sent out March 23. Forty cars daily will be shipped. The rock is transferred to the Southern Pacific railroad at Auburn and delivered to the large cement plant at Cement, near Suisun, Cal.

## GOOD ROADS.

The United States Equip Another Train of Four Cars For the Purpose of Aiding in the Great General Movement.

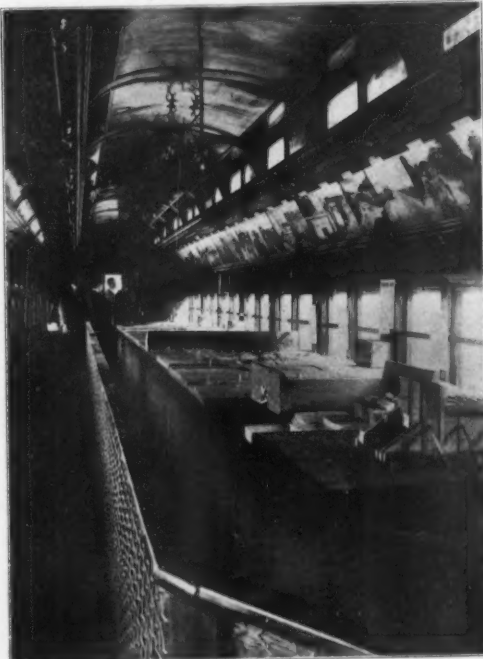
Another train has been added to the four already in use by the Good Roads Division of the Office of Public Roads to distribute information throughout the country concerning good roads. This last train which has just recently been sent off on a 15,000 mile trip is one of the best fitted up yet sent out. The accompanying illustrations give some idea of the interior of the "model" car.

The train consists of four cars especially equipped



INTERIOR VIEW IN GOOD ROADS DEMONSTRATION CAR, OPERATED BY OFFICE OF PUBLIC ROADS.

with the most complete exhibits obtainable, manned by experts from the Good Roads Division of the Department of Agriculture. The train will tour the lines of the Frisco system for the next five months, visiting several hundred points and en-



INTERIOR VIEW OF GOOD ROADS DEMONSTRATION CAR, OPERATED IN OFFICE OF PUBLIC ROADS.

deavoring to show the farmer and the city man the importance of good roads.

The "model" car is one of the most interesting in the train. In this car are the many machines in

miniature used in making good roads. The machines are operated by electricity thereby showing just the way that the larger machines are operated. The preparation of these models is a work of art and they are not duplicated in the world today. There are miniature road rollers and road machines, even a miniature quarry with a miniature crusher.

After seeing the models and thereby securing some pertinent information upon good roads, and how to make them, those visiting the train proceed to another car, which is equipped with a stereopticon machine and which seats about 60 people.

In this car a high grade stereopticon shows in a striking manner not only the disadvantages of poor roads, but the commercial and other benefits of good roads. The government has spared no expense in its good roads department, and nothing that could be done to impress upon the public the advantages of good roads has been left undone.

## ACCIDENTS FROM DYNAMITE.

By P. N. Denison

Under this heading come many and various causes for accidents, but frozen dynamite seems to top the list for trouble, due as much to improper thawing methods, ignorance or simply carelessness on the part of the blaster in not doing properly what he knows should be done. Too apt to take chances or try to save time by baking instead of thawing.

There are more accidents due to thawing and handling frozen dynamite than to any other one cause in the use of explosives, and a great percentage of all are due to carelessness, criminal carelessness I might say, for in making a shot the blaster carries the life of the men down below or around him in the hollow of his hand. Extreme caution and care is of absolute necessity in handling explosives. Fire the man who won't obey orders to the letter; it will come cheaper in the end.

When frozen the N. G. crystallizes, separates itself into hard, tiny globules and is more susceptible to friction than when in its natural condition. Open the end of a frozen cartridge and see for yourself the shiny little specks that look like mica—it is crystallized nitro-glycerine and to be handled with care.

To begin with, the dynamite in that shape will not do your work; it may go off and it may not. There is always an incomplete detonation, a slow explosion or expansion of gas and chances good for part of it not to go at all, then you have dynamite in with the stone after the blast and a pick strikes the spark that causes the accident.

This also applies to chilled or partly frozen dynamite. Therefore, be sure your dynamite is well thawed and in good shape before loading. Some of the low freezing dynamites refuse to freeze at all until water freezes. They respond readily to heat, thaw quickly and remain in that condition considerably longer than ordinary dynamite. There is therefore a big demand for low-freezing grades, and many a winter accident is thus avoided. As for the proper methods of thawing dynamite, I would be glad to send to any of you who desire it the latest booklet on the subject, covering the different methods in use as endorsed by the leading manufacturers, but don't monkey with fire around explosives, fire and dynamite don't jibe above ground, and so far this season this combination has killed two men and injured two others that I know of in the territory I cover.

Improperly tamping high explosives killed two men over here last season and injured two others in four different accidents I recall to mind. In two cases the cause was an iron bar instead of a wooden tamping stick, strictly against instructions of the quarry superintendents, I am happy to say. The others were attempts to squeeze frozen dynamite down a bore hole too small for the cartridges. The nitro-glycerine crystals jammed against the walls in that fashion rebelled, of course, and the strong men who had wielded the tamping sticks took a vacation in the hospitals to think it over. This again was against their instructions.

Insist upon your men obeying strictest orders for safety in handling dynamite. Carelessness or recklessness is, I repeat, responsible for most of your accidents. A case in instance: In conversation with a stone man not long ago he had assured me his men handled dynamite like 60-cent eggs—were as careful as could be. Later on we passed by the tool house and noticing a dynamite box in the doorway, I looked inside. The strap handle on the box showed it was used by the blaster as a handy carrier when making pop shots. What we found inside should make your hair raise—probably 15 sticks of dynamite, a coil of fuse, 20 or 30 dynamite caps and a whole handful of matches—all messed in together.

"Helps" to avoid accidents with dynamite would be to placard your magazine door, and in other prominent places around the plant tack up a list of "don'ts" and orders as to handling dynamite.

Be sure your men are familiar with safe methods of thawing, supplied with necessary equipment, whether with water thawing kettles, or if large quantities are to be used with a proper thawing house. You yourself decide upon the best method to use and insist upon the carrying out of your instructions.

Use wooden tamping bars—no metal pipe with a wooden plug in the end. The sides are apt to catch on rough pieces, or the blaster would turn end for end and hammer with just what you tell him not to use.

Use a galvanometer on every circuit before trying to shoot; broken wires or a short circuit can thus be located and trouble averted before you throw out a charge of unexploded dynamite with your blast.

Have your man who pulls the battery go to the edge of the shot in person and make sure no one is underneath or in the danger zone before he makes the blast. This little precaution has saved lives before this. Making blasts as an every day occurrence it becomes too common to the shooter and he is apt to get careless at the last moment.

Never allow smoking in or around the magazine nor a fire anywhere near when making a blast.

The blaster must exercise all possible precaution for the safety of the other men and himself, and if you run across him or the water boy carrying a basket of dynamite, caps and matches, a little justifiable homicide would be strictly in order.



# THE INDIANA STATE STONE CLUB

Hold a Special Meeting at Indianapolis and Take Up the Subject of Freight Demurrage and the Furthering of Good Roads.

A special meeting of the Indiana State Stone Club was held at the Dennison Hotel, Indianapolis, Ind., April 17.

This club which in its membership represents fully ninety-five per cent of the crushed rock operators and good roads contractors in the state of Indiana exerts a powerful influence throughout the state in uplifting the crushed rock industry.

This meeting was called for the purpose of discussing matters of vital import at this time to the industry and devising methods for calling attention and creating greater interest among the people of the state to the benefits derived from good roads. Among the matters discussed was the proposed new uniform code of demurrage rules issued by the Indiana Manufacturers' and Shippers' Association; an aggressive campaign of publicity showing the advantages of using crushed rock in the construction of roads; and recommending and recognizing a binder in the construction of macadam roads.

Both the forenoon and afternoon sessions were characterized by able discussions replete in detail and wide in scope touching upon every phase of the conditions in the crushed rock industry and the construction of good roads; the necessity of prompt action in bringing about several important changes in present conditions concerning demurrage charges and inviting cooperation from manufacturers of binders. Every speaker handled his subject well and showed a thorough and practical knowledge of what he was talking about. When discussion ceased, prompt and quick action was taken, evidencing not only good fellowship but a unanimity of spirit among the members of the club which has enabled them to accomplish things of the greatest benefit to the crushed rock industry of Indiana. The meeting was a great success from every point of view.

## WEDNESDAY MORNING, APRIL 17.

At 11 o'clock President Hodgin called the meeting to order, stating briefly that the forenoon session would be chiefly confined to preliminary and routine business. This action was taken, he stated, to permit several members who were on delayed trains, to take part in the important discussions before the meeting.

R. N. Van Winkle was in the secretary's chair.

The secretary then read the minutes of the previous meeting which were approved.

Reports of the secretary and treasurer were read showing the club in prosperous financial condition. These reports were accepted and approved.

Several interesting communications were read by the secretary.

Secretary Van Winkle, who is chairman of the Demurrage Committee, took up the question of demurrage rules in effect in Indiana. He gave to each member a bulletin issued by the Indiana Manufacturers' and Shippers' Association containing the new uniform code of demurrage rules. He then read from Acts of Indiana 1907 laws passed concerning demurrage, freight movements, delays and forfeitures, commenting upon the new uniform code of demurrage rules proposed by the Indiana Manufacturers' and Shippers' Association. He spoke of the benefits shippers of crushed rock would receive under the new uniform code, citing Rule 1 in the proposed rules "cars held for or by consignors or consignees for loading, unloading, forwarding directions, or for any other purpose, are subject to these demurrage rules except as follows." He singled out this exception: "Empty cars placed for loading coal at mines or mine sidings, or coke at coke ovens." He held the same conditions obtained in quarries and the same concessions should be made by the railroads to the quarries as to the mines. He took up many other details concerning demurrage rules affecting the crushed rock industry and urged the club to take prompt action in remedying present discriminations.

O. H. Binns heartily endorsed the opinion and advice of Mr. Van Winkle and said that the shippers of the state of Indiana have not taken advantage of the laws now upon the statute books.

C. W. McKee was entirely in accord with the two

previous speakers and believed such action would result in much good if brought to a successful termination, to shippers in the crushed rock industry. He said that vast quantities of crushed rock numbering thousands and thousands of tons would be required in various parts of the state to be used in the construction of good roads. The movement for building good roads is going on apace in Indiana but it behooves every member of this club to do all he can to give it greater force.

O. H. Binns took up the subject of macadam roads and said that without a binder they do not give the results expected. Those built years ago have demonstrated this. The fact is, he said, macadam roads require a binder. There are better roads today in the Hawaiian Islands than any in Indiana. Mr. Binns spent several months in the Hawaiian Islands this year and was told that the people there had ceased building roads without a binder as the rain fall there is fully 25 inches per day and only macadam roads with a binder give the required results. He believed the sooner the crushed rock producers recognize the binder the better for this industry. He further stated that Southern California has magnificent roads. Magnificent highways and boulevards run all through



L. B. HODGIN, PRESIDENT INDIANA STATE STONE CLUB.

the county of Los Angeles. This county appropriated \$3,600,000 for good roads by popular vote and has still in its treasury one million dollars for building new roads. The state of California has appropriated \$8,000,000 for good roads. The people of California are satisfied with their investment, it having proved a profitable one. Outlying property in Los Angeles has doubled in value since the good roads were built. Acres in five years have advanced from \$500 to \$1,000. He also stated that he believed that representatives of firms manufacturing binders should cooperate with this club.

E. E. Greely said he believed that it was not wise for counties to depend too much on government aid in building its good roads for the reason that usually work done of this kind under the supervision of the government costs twice as much as under the supervision of county commissioners.

It was moved by O. H. Binns and seconded that the president appoint two additional members to the Demurrage Committee. That the committee of five members meet at Indianapolis, Ind., and present such paper as spoken of in this meeting concerning concessions and modifications in demurrage rules, to the Indiana Railroad Commission. Carried.

New business was then taken up and disposed of, after which the meeting adjourned to 2 o'clock p. m.

## WEDNESDAY AFTERNOON, APRIL 17.

President L. B. Hodgin called the meeting to order sharp at 3 p. m.

The chair appointed E. T. Milligan and H. Evans, the two additional members to the Demurrage Committee.

Secretary R. N. Van Winkle, chairman of the Publicity Committee, was requested to give an outline of the booklet he is preparing for publication and which the club will distribute through its members throughout the state to County and Highway Commissioners, farmers and merchants interested in the good roads movement. The following are some of the excerpts which were taken at random and read by Mr. Van Winkle before the meeting. The title of the booklet is "Facts About Macadam Roads." The first page will contain the following statement: "Better roads, macadam roads, \$1.02 per capita, 1½ mills annual tax levy. The above will build \$50,000,000 or about 25,000 miles of macadam roads in Indiana. Why not bond the state, build the roads. It's a business proposition."

The following statistics of miles of stone and gravel roads in the United States are given:

In the U. S. in 1904 there were 36,818 miles of stone road.

In the U. S. in 1909 there were 59,237 miles of stone road.

Increase of 22,419 miles.

In the U. S. in 1904 there were 109,905 miles of gravel road.

In the U. S. in 1909 there were 102,870 miles of gravel road.

Decrease of 7,035 miles.

What does this mean?

The following excerpts taken from the daily press of the country during the twelve months past will appear under the caption of "Side Talk:"

Governor Dix of New York says: "Morbid objections to the construction of roads are brakes upon the wheels of progress."

More people will be benefited by cheaper transportation on the land than on water but the water ways crowd have always maintained a lobby and secured the appropriations.

Everywhere merchants are saying: "If the roads were good, the farmers would deliver their grain and pay me and I would pay the wholesale houses."

The necessity for better roads is the greatest need of the hour. The land owners cannot build them but they will help if the county and state will come to their assistance.

However startling it may seem to us, it remains a fact, nevertheless, that freight rates begin at the farmer's door; and since the railroads have done their share, in full measure in reducing their charge to a minimum, it is time for the farmer and the public to cooperate for that reduction in the transportation of living necessities, which can still be made and which means so much to farmer and public alike.

Stop cussing the middle man and fix your road so that you can dodge him and get to the consumer.

The farmer, the manufacturer, the miner, the merchant, the residents of cities and villages, the traveler and the people in every walk of life demand good roads. The farming element of the nation only constitutes about 35% of its population, and it is not fair or equitable to expect it unaided to build and maintain all the public highways for the use of the other 65%.

State bonds for roads will bring larger and quicker returns in increase of business, greater development of natural resources, increased value of all real estate, better social conditions, better homes, better wives and more cheerful mothers than any other investment that can be made by any state.

## Macadam Roads.

"All things considered, first cost, maintenance and efficiency, stone has proven and will prove the best and cheapest material for surfacing the county roads and highways. Among its advantages are: ease of application, a hard smooth surface which is impervious to water and ease of repair when properly made. It has the disadvantage of becoming dusty and dry and somewhat muddy in wet weather but these are not serious faults."

—W. S. Blachley, State Geologist in his Thirtieth Annual Report, November, 1905.

Public highways in Indiana, 68,285 miles.

Improved stone or gravel, 23,937 miles or 35%.

Average cost of stone or macadam roads per mile in Indiana, \$2,221.

Average cost of gravel road per mile in Indiana, \$1,403.

We leave it to you to compare their wearing and lasting qualities.

In the United States an average of 27,000 tons of water falls each year on a mile of country highway three rods wide.

Land in Canandaigua County, N. Y., has increased \$20 to \$40 per acre on account of being located near macadam highways.

During the crop year of 1905-06 in U. S. 85,487,000,000 pounds of farm produce were hauled over common roads from the farm to shipping points. These crops traveled 208,432,644 miles. Cost of haul. Average cost 1 ton one mile, 23c.

On sandy roads per ton mile, 64c.

On stone roads per ton mile, 12c.

A reduction in the cost of hauling from 23c to 12c would mean an average saving of over \$250,000,000.

## Cost of Hauling.

Tractive Force. Estimated power required, to pull one ton on good clay road, 125 pounds.

Estimated power required to pull one ton on best gravel road, 75 pounds.

Estimated power required to pull one ton on macadam road, 45 pounds.

It is estimated that an average size horse will exert a pressure against his collar all day long of 125 pounds.

On the above basis he will therefore draw on

A good clay road—one ton.  
A good gravel road—1½ tons.  
A good macadam road—2½ tons.  
Improved roads increase the value of farm land in the state of Indiana 78c per acre annually. This applies to the entire acreage of Indiana 23,264,000 acres, means \$18,145,920. All good roads in Indiana would mean \$18,145,192 per year to the farmer.—Statistics by Prof. W. C. Latta, Purdue University.

In 1904 only 7.14% of the public roads in the United States were improved.  
In 1909 only 8.66% of these public roads in the United States were improved.

The booklet will conclude with an exhaustive article on "Advantages of Good Roads," by W. S. Blachley, State Geologist of Indiana, in which he treats the subject, grouping facts in most convincing manner, leaving no doubt in the mind of the reader that good roads are a most profitable investment to farmers, merchants and manufacturers in the state of Indiana.

E. T. Milligan voiced the sentiment of the members of the club when he gave the booklet his unqualified approval. He believed, however, that a valuable feature in this booklet, to be used for publicity purposes in promoting the sentiment for good roads, would be to incorporate specifications of binder roads.

James Poulson, of Cincinnati, representing the Barrett Manufacturing Company, was requested to give his views on cooperating with the crushed stone operators in the state of Indiana. He said he saw no reason why the firms manufacturing binders for roads, of which his company was among the largest producers in the country, should not unite



R. N. VAN WINKLE, SECRETARY INDIANA STATE STONE CLUB.

with the stone men. The interests of both were mutual and cooperation would result in mutual benefits. In Ohio he said the stone people soon found that the firms manufacturing binders boosted the crushed rock industry there, and that cooperation of both interests in the good roads movement proved of the greatest mutual benefit.

O. H. Binns moved that the secretary be instructed to invite the binder material people to become honorary members of the club. Seconded and carried.

The chair appointed as per instructions R. N. Van Winkle and H. E. Helm the two additional members to the Publicity Committee which now consists of the following members:

O. H. Binns, A. B. Meyer, C. W. McKee, R. N. Van Winkle and H. E. Helm.

The five members of the Demurrage Committee are: R. N. Van Winkle, O. H. Binns, E. B. Taylor, H. Evans and E. T. Milligan.

Secretary Van Winkle gave the members tentative figures on the cost of publishing the booklet. These figures per copy, he said, depended on the number of thousands of copies to be published. Ten thousand copies were immediately taken by the members tentatively, to be paid for by their individual firms and distributed by them in the immediate localities where the booklet would be most needed. This individual distribution does not include the booklet to be sent throughout the state by the Indiana State Stone Club itself.

The meeting then went into executive session and adjourned at 5:30 p. m. sine die.

#### The Attendance.

E. D. Taylor, A. & C. Stone & Lime Company, Greencastle, Ind.  
E. M. Baltes, Baltes Stone Company, Montpelier, Ind.  
O. H. Binns, Casparis Stone Company, Kenneth, Ind.  
C. W. McKee, Erie Stone Company, Huntington, Ind.  
R. E. Groely, Groely Stone Company, St. Paul, Ind.  
L. B. Hodgins, Kokomo Stone Company, Kokomo, Ind.  
W. W. Hawley, Logansport Stone & Construction Company, Logansport, Ind.  
H. Evans, Monon Stone Company, Monon, Ind.  
E. T. Milligan, Muncie Stone & Lime Company, Muncie, Ind.  
R. N. Van Winkle, Ohio & Indiana Stone Company, Greencastle, Ind.  
H. E. Helm, Spencer Stone Company, Spencer, Ind.  
James Poulson, Barret Manufacturing Company, Cincinnati, O.  
George H. Keyes, The Aetna Powder Company and The Miami Powder Company, Louisville, Ky.  
W. F. Gainty, The Aetna Powder Company and The Miami Powder Company, Chicago, Ill.  
F. R. Van Hamm, Rock Products.

The Peerless Granite Stone Company has bought the plant of the Bode Stone Company at Portsmouth, O. It will be incorporated under the Ohio laws by James Coirt, Fillmore Musser and Frank Schwank.

A. G. Morris & Son report the letting of contracts just started in the Pittsburgh district. They recently finished their quarry in Butler county, Pennsylvania, and are now equipped to take care of all kinds of business of this sort on a large scale.

The Clydesdale Stone Company will start its quarries next week in Beaver and Lawrence counties, Pennsylvania. Its prospects indicate a better feeling or rather a large amount of work coming forward from the architects than last year and shipments will be steady and rapid from this time forward.

The Jackson Stone & Sand Company, capital \$10,000, has been incorporated at Mercer, Pa., by J. M. Campbell, W. G. Christly, F. P. Filer and others of that place and W. H. Harrison, of Lettsdale, Pa.

The W. J. Sparks Company, of Mt. Vernon, Ky., is now installing a rock crusher of considerable capacity, which will enable the quarry concern to furnish material to the concrete workers of that section. The crusher is of the most approved type, of sufficient capacity to meet a growing demand during the season.

The Henry Schreitmuller Stone Company, of Newark, N. J., has been incorporated to deal in stone building material with a capital stock of \$25,000. The incorporators are H. Schreitmuller, C. F. Klink and I. Bernauer, all of Newark, N. J.

John Cherry, of Jacksonville, Ill., was awarded paving contracts at Pana, Ill., worth \$70,000.

#### BUILDING STONES AND CLAY.

A recent contribution of note is the book "Building Stones and Clay," by Edwin C. Eckel, C. E., published by John Wiley & Sons, New York and Boston. The book may in a sense be considered as an outgrowth of the author's previous work on cementing materials, and deals with natural materials which are closely related to the manufactured products discussed therein.

The work is of a general nature and little space has been devoted to a description of the local distribution of building stone, although extensive reference lists are presented showing where information regarding the stone and clays of any particular state may be found.

The chapters pertaining to the examination and valuation of stone and clay properties are of especial interest and value. The book throughout is illustrated by halftones from photographs made, in most instances, by the author, and may be secured upon application to the publishers, John Wiley & Sons, Scientific Publishers, 43-45 West 19th St., New York, N. Y. The price of the book is \$3.00 net.

The Keystone Driller Company, Beaver Falls, Pa., has issued to the trade the 1912 edition of Catalogue No. 6, which describes its line of deep well pumps. It is an 86-page folio, elaborately illustrated, and contains complete information and price lists relative to the line of pumps and fittings manufactured by that company, and also some interesting and concise data pertaining to the installation of same.

To every well driller or engineer who has to do with pumping problems the book will be helpful and interesting, not only because of the information it contains upon a tried and approved system for elevating large quantities of water from deep artesian wells, but also on account of the numerous tables of pressure capacity, etc., which have been collected.

The Keystone Driller Company would gladly send a copy of the catalogue to anyone interested upon request.

#### AMERICAN FABRIC BELTING CO.

Among the few auxiliary exhibits at the Clay Products Exposition held at the Coliseum in Chicago from March 7th to 12th, inclusive, was that of the American Fabric Belting Company, of Cleveland, Ohio. These people were wise and fortunate enough to secure a desirable location where they displayed their Nestor belting. The representatives of this company who were present at the show included Joseph Foster, Jr., A. K. Kinley, Dan Arbuckle, all of Cleveland; H. W. Spalding, Chicago; A. B. Nichols, Seattle, and L. A. Ford, Cincinnati.

Realizing the increasing importance of clay products and allied industries, the American Fabric Belting Company has, during the past few years, made a particular study of the belting requirements, brick, cement, crushed stone, gravel and other plants of such nature. They have been remarkably successful in producing a belt that particularly appeals to this trade, because of its combined efficiency and reasonable first cost.

The following extract from a letter by the Cincinnati Crushed Stone & Gravel Co. relative to Nestor belts which they are using at their plant, reads in part as follows:

We are pleased to advise you that we have been using for the last twelve months one of the Nestor belts, 26 inches wide, on a stone elevator 75 feet high.

The buckets were placed as close as possible and the holes for the belts made with rivets instead of punched. There is not a single defect shown in the belt or the riveting and the belt has stretched so little that it is impossible to get your finger between the buckets.

We are more than pleased with the result, as the trouble that we have had with all other elevator belts is that they stretch so much that there is such a separation in the buckets that it is next to impossible to keep the stone from getting behind the buckets or eating and wearing the belt between the buckets.

This elevator has handled over 100,000 yards of stone during these twelve months, and from its present condition, the belt will last for several years, as we can find absolutely no wear.

The Builders Brick Company, of Chicago, report regarding 1,000' of 10" Medium Nestor which they installed in March, 1911, for conveying green brick from brick machine directly into kilns, that since this belt is practically new after giving them one season's service, they are sending orders for 600' of cross belts which they will use to convey brick across the kilns standing at right angles with the said main conveyor.

The Ozark Smelting & Mining Co., of Coffeyville, Kan., report that the bucket elevator installed by them early in 1909 to convey crushed ore, is still in use, never having given them any annoyance by stretching, as they have not had to take out any of the belting to take up the slack; nor have they had to shut down this elevator on account of repairs.

The Cleveland Brick & Clay Co. report that the 30" extra heavy Nestor which they are using for main drive has been doing fine work during the last two years. They state that this belt runs slack, without slipping, and that it has been unnecessary to use any belt dressing on it.

The Indianapolis Pressed Fuel Co., Indianapolis, Ind., after several years experience with Nestor have equipped their new plant with this plant. They state that Nestor is the best all around belt in the world, and we are backing our belief by buying all Nestor belt for our new plant now being installed.

#### BONNELL IRIS AGGREGATE.

It is with pleasure that we announce that John Harper Bonnell, proprietor of the Iris Porphyry quarries, has equipped his plant with crushers and is now able to place this wonderful crushed product on the market, under the trade name of Bonnell Iris Aggregate. Iris porphyry, in its natural state, is a marvelously beautiful substance, combining and blending pink and green in its various shades. When used as a facing for concrete work it gives it a distinctive appearance which cannot be secured with any other material. At the New York Cement Show this material was exhibited by Mr. Bonnell to the various cement manufacturers and art concrete workers and it created a veritable sensation. He was immediately asked to put this material on the market.

The crushers have just been installed and he is now ready to ship this material to any part of the country. Samples will be sent free upon application. This material must be seen to be appreciated. It has the recommendation and endorsement of some of the leading architects of this country and if the concrete worker desires a material which will lend to his work a distinct variety he will do well to investigate. Write to John Harper Bonnell, 501 Fifth avenue, New York, N. Y., and mention Rock Products and you will be sent a free sample.

Harm Rustman, of Flanagan, Ill., has sold his concrete block factory to Edward Wubben.



## POTOMAC REFINING CO.

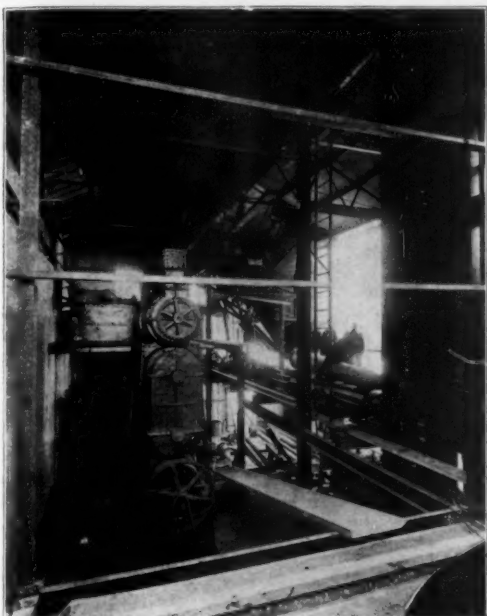
(Continued from Page 3.)

of builders' supplies absolutely refuse to handle lime in any other form, and contractors and plasterers, recognizing the value of this material, have created a demand which has not been met in many localities. It has increased the use of lime in all parts of the country.

The shipping facilities of the company are most excellent, as the canal offers them the cheapest canal boat transportation to Washington, Baltimore, Philadelphia and other nearby markets, as well as the Baltimore & Ohio Railroad, which is directly at hand.

The Potomac Refining Company already have on their books a number of large orders for hydrated lime, as samples of the material have shown it to be one of the highest grade products offered on the market today.

The general offices, as well as the sales offices, are



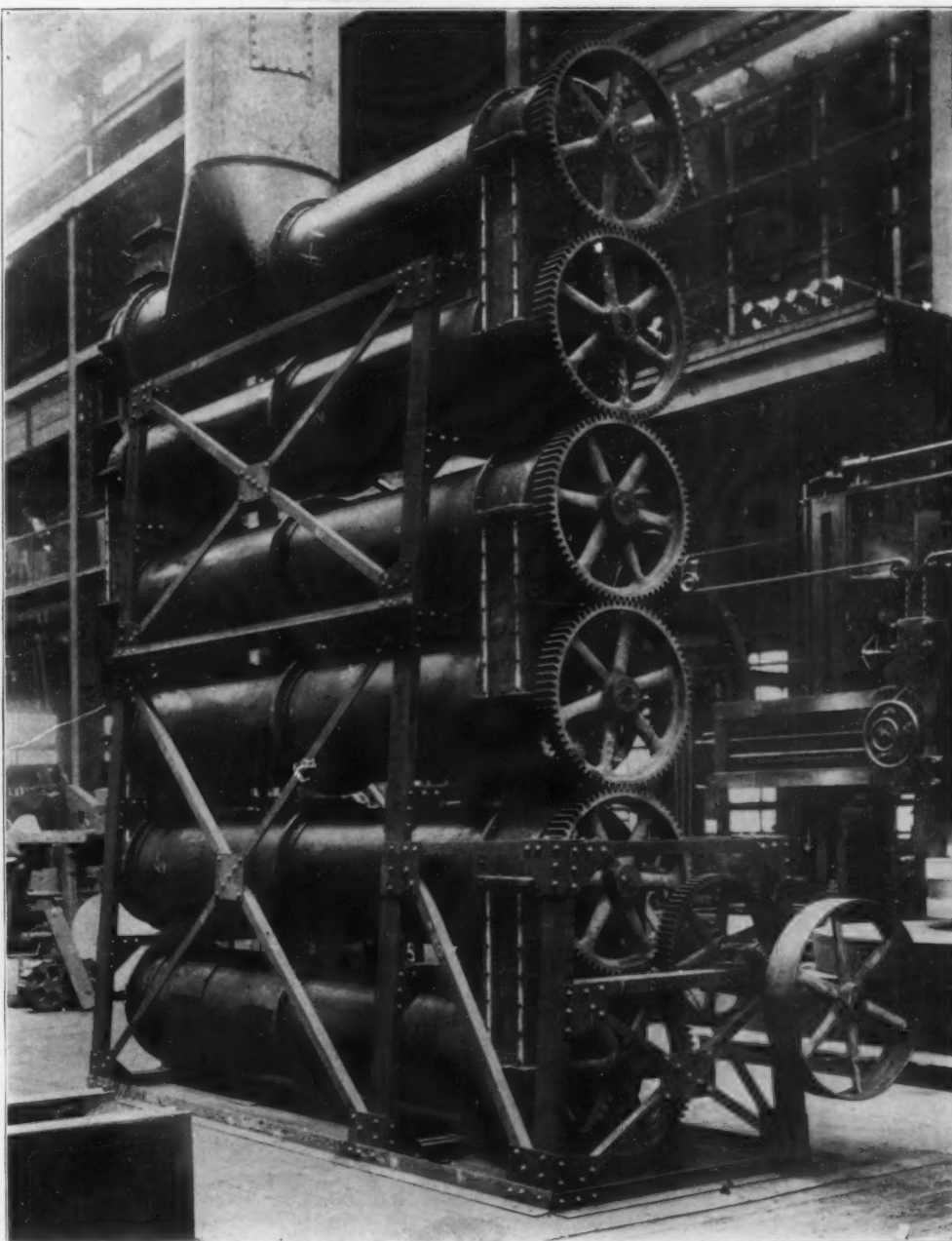
HYDRATING PLANT DURING CONSTRUCTION.

located in the Law Building, Baltimore, Md. The officers and directors are all men of high business standing. The Hon. M. P. Kehoe is president, C. B. Sanger is secretary and H. C. Hess is the treasurer.

## SPECIFICATIONS FOR LIME.

The German Association of Lime Manufacturers have agreed to standard tests for lime, the following being a brief summary:

Quick lime should be preserved from the damp and should leave no residue on a sieve with 411 holes per linear inch, and not more than 2 per



KRITZER HYDRATOR AT THE POTOMAC REFINING COMPANY'S LIME HYDRATING PLANT. cent on a sieve with twenty-eight holes per linear inch. Slaked lime, sold ready for use, should not leave more than 10 per cent residue on a sieve with seventy-five holes per linear inch.



INTERIOR VIEW OF KILN ROOM.



LIMESTONE LEDGE ALONG CANAL.

The setting time of the lime, an important factor in many cases, is determined as follows: A syrupy paste of lime and water is placed in a mold and is tested with a Vicat needle or with a thin iron rod at regular intervals. The age of the mixture when the paste no longer flows off the rod when the latter is withdrawn indicates the setting time. Constancy of volume is shown by keeping the lime paste in a mold with a felt lid kept moist. The slab of set paste is then immersed in water and should show no signs of cracking after ten days.

Tensile strength tests are made on mixtures of lime and standard sand in the same manner as cement, but the lime briquettes must be kept in an atmosphere of 85 per cent humidity before testing.

The minimum tensile strength should be:

For non-hydraulic limes—Twenty-eight and a quarter pounds per square inch after twenty-eight days in air; forty-three pounds per square inch after hardening fifty-six days in air. For feebly hydraulic limes—Twenty-eight and a quarter pounds per square inch after twenty-one days in air and seven days in water; forty-three pounds per square inch after twenty-one days in air and thirty-five days in water. For strongly hydraulic limes—Seventy-one pounds per square inch after seven days in air and twenty-one days in water; one hundred and fourteen pounds per square inch after seven days in air and forty-nine days in water.

#### PITTSBURGH LIME NEWS.

Pittsburgh, Pa., April 20.—In hydrated lime there is an excellent trade at very good prices. Agricultural lime business is very slow owing to the continued cold bad weather and the impassable roads which are holding back farmers now. The limestone quarries are getting busy and more limestone is to be sold for good work, etc., in western Pennsylvania than ever before. Contracts are bidding very close on this work but in spite of that prices are quite as good and in many cases a little better for stone than last year.

Miller & Coulson are running their plant at Salineville, Ohio, at nearly full capacity and report some improvement in lime trade. The great drawback is that roads are too bad for farmers to haul lime home from the stations.

The National Mortar & Supply Company reports a very good trade in hydrated lime this month. Its plant at Gibsonburg, Ohio, is running full. The car shortage and the bad country roads are its chief drawbacks, as the latter has delayed greatly its business in agricultural lime. A. H. Lauman, president of the company, is making a business trip to the East and Northeast this week.

Farmers near Ellwood City, Pa., have built an immense lime kiln in the open field on the Harmony trolley line and have just fired it. The kiln covers an area of 50 square feet. In this district farmers have hitherto burned their own lime individually but this spring they banded together and built this kiln and will divide the finished product pro rata.

#### ALCA LIME SCALE.

The Charles Warner Company, of Wilmington, Del., who are manufacturers and distributors of Alca lime, has recently issued the Alca lime scale, which is one of the neatest contrivances for computing yardage and quantities of plaster material that we have ever seen. No doubt the Charles Warner Company would be pleased to mail one of these scales to any user of Alca lime.

The Chicago Unit Construction Company, of Chicago, has decreased its capital stock from \$100,000 to \$1,000.

A. J. Bird Co., Rockland, N. Y., has been incorporated with a capital stock of \$50,000, to manufacture lime. President, A. J. Bird; treasurer, M. W. Herrick, Rockland.

A new organization in the lime industry is that of the Tehachapi Lime Manufacturing Company, of Los Angeles, Cal. The capital stock is \$100,000, with \$5 subscribed. Directors: Frank R. Cummings, George Gordon, S. H. Garrett, J. F. Wallis and Rex De Barr.

The Acme Brick & Sand Company has been incorporated in Milwaukee with a capital stock of \$20,000 by P. G. Toepfer, I. G. Toepfer and Charles J. Pokorny. The company has purchased the Hydraulic Stone & Brick Company's plant at West Bend, Wis., about thirty-five miles from Milwaukee. The plant has been remodeled somewhat, considerable equipment has been added and a brick is being manufactured which contains caustic lime burned in southern Indiana. B. Lee Blanchard is sales manager and William Modes is superintendent. Milwaukee offices will be maintained at 193 Broadway.

#### NEW YORK LIME NEWS.

New York, N. Y., April 16.—The demand for lime during the past month has assumed normal proportions. The prospects for an improved demand during the spring season are very bright.

C. J. Curtin, of the Farnham-Cheshire Lime Company, stated: "The demand for lime has been progressing in a fair way during the past month and as soon as the spring building operations are in full swing the consuming inquiries will undoubtedly assume good proportions. We look for a normal and steady business to materialize during the spring and summer months. Prices rule firm. The outlook is very bright and much better than it was a year ago."

Foster F. Comstock, of the Comstock Lime & Cement Company, reviewed the local lime trade as follows: "The call for lime during the past month improved somewhat and from present indications we are going to do a good amount of business during the summer months. The outlook has brightened considerably of late and business appears good all around."

#### STENCIL GUARANTEED WEIGHT.

New York, N. Y., April 16.—The Lime Manufacturers' Association of New York announces that they are about to stencil the guaranteed weight of each barrel of lime as containing 300 pounds gross, and they also wish to call attention to the importance of leveling the lime after it is dumped into the ring so that the water will reach all parts of it at the same time, which will prevent the lime from burning in the ring. They claim that the great trouble that has been caused by many limes in New York is due to the fact that there has not been sufficient water in the ring, and the lime has not been hoed enough while being slacked. The association has informed the trade that it is desirous of co-operating with them to have nothing but the best products sold and distributed in this market.

C. J. Curtin, secretary of the association, 39 Cortlandt street, New York City, stated that the work of the association has met with the approval of builders, architects and other members of the trade, and they have been very much gratified with the courteous manner they have been received by the building superintendents of the four boroughs of New York City.

The York Valley Lime Co., whose plant is located near Hallam, Pa., suffered a \$30,000 loss by fire last month.

The Plum Trees Lime Company, of Bethel, Mass., has been organized with a capital of \$15,000, paid in. Wilbur F. Tomlinson is president.

A. W. Morris, of Grove, Okla., has sold his interest in the Grove White Lime Works to F. T. and E. C. De Shong, of Bentonville. The plant is valued at \$15,000 and has a capacity of 200 barrels per day.

S. Burch & Sons Construction Company, Fargo, N. D., was the lowest bidder on about \$200,000 worth of work in their city. The contract has been awarded and the work will go forward without delay.

The Pennsylvania Limestone Company will double the capacity of its plant in Brady's Bend township, Armstrong county, Pennsylvania, at a cost of about \$300,000. A new power plant and crusher will be installed, bringing the capacity of the plant up to fully 3,000 tons a day. New mines will also be opened in Holdens run.

The Pennsylvania Coal & Supply Company, of Milwaukee, prominent jobber of brick and other building material, has increased its capital stock from \$750,000 to \$1,000,000. The stock includes 10,000 shares, 2,500 of which are preferred and bear dividends at 6 per cent. J. B. Whitnall is president and August F. Johns secretary.

A new company, headed by Mr. Osborn, of New Castle, Pa., has just been organized for the purpose of carrying on a lime business in the vicinity of Houck-Newtown hollow. It is said that two large kilns will be erected at Ellwood City at once. The limestone will be secured from the quarries in the immediate vicinity, which were opened up twenty years ago, and which for some reason was abandoned.



The Queens Run Fire Brick Company, of Lock Haven, Pa., has completed arrangements for building a portable mill.

The Pennsylvania Clay Products Company recently built a splendid sewer pipe plant at West Winfield, Butler county, Pennsylvania, which is entirely equipped with new machinery.

The Glass Brick Company, of Pittsburgh, has secured the order from the city of Chicago for 300,000 glass brick to be used in sanitary work in public buildings. Shipments will be started at once.

The Frank H. Stowell Company, of Chicago, has been granted a charter to do general contracting, with capital stock of \$10,000. The incorporators are E. W. Rawlins, W. S. Jackson and W. W. Dixon.

The Sharon Clay Products Company, which recently acquired the plant of the Rose Brick Company at the state line in Brookfield township, has just been granted an Ohio state charter. The company is capitalized at \$30,000.

The Freeport Clay Manufacturing Company, of Freeport, Ill., has been incorporated to manufacture and deal in clay products. The capital stock is \$40,000. The incorporators are Arthur N. and Nellie S. Trunk and Frank C. French.

The Industrial Engineering & Inspection Company, of Chicago, has been incorporated with capital stock of \$2,500, to do general construction work. The incorporators are Frederick L. Davies, Samuel A. Harper and Edward R. Coyle.

The Pittsburgh-Callery Brick Company is about to start work at its plant at Callery Junction, Ohio, on the B. & O. Very little letting has been done, its officials say, although the prospects for 1912 business are much better than last year.

The Illinois Silo Company, of Bloomington, Ill., which is a distributor of the A. P. Grout Vitified Tile Silo, made by the Illinois Drain Tile Company, of White Hall, has purchased an eight-acre tract in Bloomington upon which a plant will be erected.

Manufacturing drain tile is one of the objects of the newly incorporated Continental Brick Company, of Aledo, Ill. The incorporators of the concern, which is authorized to have a capital stock of \$100,000, are J. L. Buckley, Lamont Cowles and Peter Magel.

The Ridgway Brick Works on North Broad street, Ridgway, Pa., started up last week. Manager Owens is sure that the prospects for this year are the brightest of any yet in the history of the company, and his entire output is in splendid shape for spring work.

Extensive improvements were made at the plant of the Ringle Brick Company, of Wausau, Wis., before it was placed in operation this spring. An addition to the drying department was erected and considerable new equipment installed. John Ringle, head of the company, is president of the Wisconsin Clay Manufacturers' Association.

The common council of Manitowoc, Wis., recently decided by a unanimous vote to pave South Main, North Main and York streets with brick. The contract has been awarded to the Schuette Cement Construction Company, of Manitowoc. Various petitions had been circulating advocating the use of various materials and the council took the matter into its own hands.

The National Sewer Pipe Company, of Webster City, Iowa, has let contract for the construction of its new sewer pipe and clay products plant at Webster City, Iowa, to W. J. Zitterell. Building operations will begin about April 1. George E. Lowrie, of Lehigh, Iowa, the general superintendent of the factory, moved to Webster City March 15. L. E. Crowter is president of the company.





## Security Portland Cement

is always dependable because of its unvaryingly uniform composition and thorough burning. Its well balanced Lime and Silica contents furnishes the greatest possible amount of strength and durability. Every barrel is guaranteed to pass Standard Specifications. Splendid Railroad facilities and big output and storage capacity enable us to guarantee prompt shipments in any quantity.

## Berkeley Hydrated Lime

Of highest calcium content, perfectly slacked and purified at the Kiln by special process. It will not air-slack and keeps indefinitely without deterioration. Renders concrete waterproof and vermin-proof. Especially adapted for cement mortars.

### "ALCA" LIME

combines all the good qualities of old fashioned Lime Mortar with quick hardening qualities so essential in modern plasters and stuccos. Prepared with or without hair.

Write for Booklets which give information you ought to know about these products

## Security Cement & Lime Co.

Main Office Western Offices  
BALTIMORE, MD. PITTSBURGH, PA.



## - "AA" Means - "The Best That Can Be Made"



THERE is no better way to encourage and promote the use of cement in your territory than by handling the "Chicago Double A" Brand. Our campaigns of education, conducted on behalf of the dealer, are a feature of our service and the use of our product insures satisfactory work.

Write for full particulars and prices today.

Chicago Portland Cement Co.  
Dept. 74, 30 No. La Salle St. Chicago  
J. U. C. McDANIEL, SALES MANAGER

Manufacturers of the

"Chicago Double A" Brand  
"The Best That Can Be Made"

PRESENT OUTPUT **1,500,000** BARRELS ANNUALLY

## WETHRPRUFE

Open  
Mouth

Bates  
Valve



## WATERPROOF

An Extra Heavy, Extra Strong  
WATERPROOF PAPER BAG  
For Cement, Plaster, Lime, Etc.

West Jersey Bag Co.

Camden, N. J.



SALES OFFICE:  
Liggett Bldg., St. Louis

## THE Standard Brands

OF  
PORTLAND CEMENT  
Lightest in Color  
Highest Tensile Strength

### ALWAYS UNIFORM

Always the same high quality. Prompt shipment guaranteed and made possible, as each mill is located within switching limits of the two greatest railroad centers of the West. You are assured of your orders being promptly filled.



SALES OFFICE:  
Long Bldg., Kansas City

MANUFACTURED BY

Union Sand & Material Co.

ST. LOUIS  
Liggett Bldg.

KANSAS CITY  
Long Bldg.

MEMPHIS  
Tenn. Trust Bldg.

Tell 'em you saw it in ROCK PRODUCTS

**SAMSON CEMENT  
SAMSON PLASTER  
PEARL HYDRATED LIME  
WATERPROOFING MATERIALS  
BUILDERS' SPECIALTIES**

**SEWER-PIPE**  
HOLLOW TILE  
BUILDING BLOCK  
**HOUSTON-BROS.CO. PITTSBURG**

**ROOFING SLATE  
BLACK BANGOR AND  
SEA GREEN  
GENASCO & NIAGARA  
ASPHALT ROOFINGS  
ALL SLATERS' SUPPLIES**

## Bonnell Iris Aggregate

Makes the most beautiful, distinctive and original surface for concrete work. It is unlike any other material and must be seen to be appreciated. If you want to do concrete work which will show a marked individuality, try this material. Sample sent on application.

ENDORSED BY LEADING ARCHITECTS

**JOHN HARPER BONNELL**  
501 Fifth Avenue New York City

**WHITEHALL**  
**PORTLAND CEMENT**

**Whitehall Cement  
Manufacturing Co.**  
1722 Land Title Bldg.  
Philadelphia

**OTTAWA SILICA CO.**  
**Ottawa, Ill.**

**Washed-Steam Dried and Screened**

**White Sand**

Unexcelled for { Facing Concrete Blocks  
Ornamental Concrete Stone  
White Plaster  
Roofing  
Exterior Plastering  
Sawing Stone and Marble, etc.

Analysis 99.90%

Prices, Freight Rates and Samples on Application

Shipped in Paper Lined Box  
Cars or in 175-lb. Bags

You can order less than a carload, in fact shipments as small as five 175 lb. bags can be delivered economically.

LARGEST SHIPPERS OF WHITE SAND IN THE UNITED STATES

**MEACHAM & WRIGHT COMPANY**  
**CEMENT**  
**CHICAGO**



**Saylor's Portland Cement**

Oldest American Portland

Used by the United States Government since 1876

**COPLAY CEMENT MANUFACTURING CO.**

SALES OFFICES:

Fifth Avenue Building, NEW YORK CITY 1106 Land Title Bldg., PHILADELPHIA

ROBERT W. HUNT JNO. J. CONE JAS. C. HALLSTED D. W. McNAUGHER

ROBERT W. HUNT & CO., ENGINEERS

**INSPECTION CEMENT & REINFORCING STEEL**  
CHEMICAL AND PHYSICAL TESTING

Chicago  
Montreal

New York  
San Francisco

Offices and Laboratories  
Pittsburgh  
Toronto

St. Louis  
Mexico City

London  
Seattle

**"Riverside"  
Plaster of Paris**



is made from the best selected Nova Scotia Gypsum, and is the recognized standard in quality. It sets slowly, works cool, has great tensile strength.

It is the lightest, the finest, a pure white in color, and absolutely uniform.

It has the greatest covering capacity and makes the hardest wall.

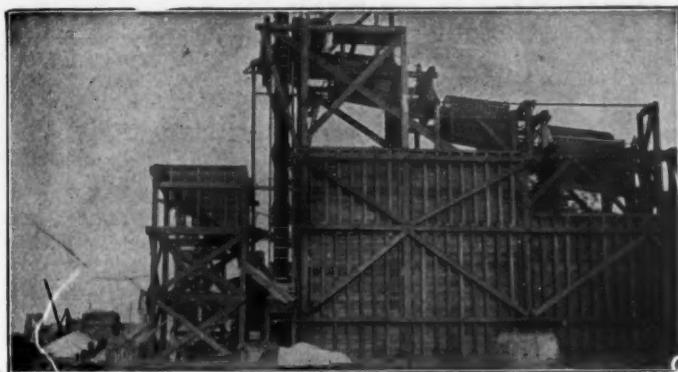
If you are interested in Finishing, Casting or Dental Plasters write for our "Riverside" Booklet. It tells how all Plaster of Paris is manufactured and why "Riverside" is the highest grade of Plaster made.

**Rock Plaster Manufacturing Co.**

381 Fourth Ave. - - New York City.

Tell 'em you saw it in ROCK PRODUCTS





### A Portion of the Plant of the Norfolk Sand & Gravel Co.

At this plant sand and gravel is unloaded from barges on the river into the hopper at the left of the picture. From this hopper it is elevated to the Gilbert Screens which wash and size the material and pass it to the bins below. From these bins a belt conveyor receives the material and delivers it to large concrete bunkers from which it may be drawn to the wagons.

The design of this plant provides large emergency storage space, large bin storage, and yet the screening plant proper is very low. This plant is perfectly adapted to the local conditions and delivers a high quality of material most economically.

## "S-A" Gravel Washing Plants Are Standard

We originated the general design of plant which is used almost entirely today. We have adapted our machinery to the special requirements of this work and have led in its improvement and development. We have designed and erected practically all of the successful plants now in operation.

By standard plant we do not mean that one design can meet all conditions. The same general principles are followed always, and the parts are standardized, but each installation has required special study and treatment.

We are always glad to submit designs and suggestions.

### Stephens-Adamson Mfg. Company

Aurora, Illinois

CHICAGO  
ST. LOUIS

NEW YORK  
BIRMINGHAM

PITTSBURGH  
LOS ANGELES

PORTLAND  
SAN FRANCISCO



Shipping facilities which are unequaled, the strategic location of our plants with reference to freight transportation, our enormous storage capacity, our methods of manufacture which represent the highest development in Portland Cement making, the use of the purest and most uniform of raw materials, and our strict compliance with all contracts are the important factors in the growth of our output from 32,000 barrels in 1900 to 12,000,000 barrels in 1912.

### UNIVERSAL PORTLAND CEMENT CO.

Chicago — Pittsburgh — Minneapolis

Plants at Chicago and Pittsburgh

*Annual Output 12,000,000 Barrels*

Tell 'em you saw it in ROCK PRODUCTS

# "NESTOR"

**SOLID WOVEN WATER PROOF BELTING**  
**ELEVATING—CONVEYING—TRANSMISSION**

**The Cincinnati Crushed Stone & Gravel Co.**

WASHED CRUSHED BOULDERS    WASHED SAND AND PEBBLES  
 ROOFING GRAVEL

OFFICE 725-726 UNION TRUST BLDG.

PLANT, Remington, O.

CINCINNATI, Oct. 30, 1911.

The American Fabric Belting Co.,  
 Cleveland, Ohio.

Gentlemen:-

We are pleased to advise you that we have been using for the last twelve months one of the Nestor Belts, 26" wide on a stone elevator 75' high.

The buckets were placed as close as possible and the holes for the belts made with rivets instead of punched. There is not a single defect shown in the belt or the rivetting and the belt has stretched so little, that it is impossible to get your finger in between the buckets.

We are more than pleased with the result, as the trouble that we have had with all other elevator belts is that they stretch so much that there is such a separation in the buckets that it is next to impossible to keep the stone from getting behind the buckets or eating and wearing the belt between the buckets.

This elevator has handled over 100,000 yards of stone during these twelve months, and from its present condition, the belt will last us for several years, as we can find absolutely no wear.

We also have the Nestor Belt running from an extra driving pulley on our engine to our countershaft directly above, from which countershaft we have a rope drive that takes care of the elevator, several screens, stone washer, etc., and the drive from the engine is handled with an idler so that if there is any trouble with the screens or chutes in the building, we can throw off the idler, stopping all the machinery excepting the crushers which are driven from a line shaft directly from the main drive on the engine. This gives the crushers a chance to crush out all the stone and saves the hard work of digging out the crushers.

To-day, while at the plant, the superintendent showed me that while all the machinery was running without any load, releasing the idler entirely, the belt still clung to the pulley and turned all the machinery. The only way to release the belt was to use iron bar and throw the belt free of the pulley.

We believe this tells an interesting story as to the quality of your belt.

In the several plants in which I am interested, we are replacing all the belts with Nestor.

Yours very truly,

The Cincinnati Crushed Stone & Gravel Co.,

*Lawson Morrow*  
 President.

**BUILT ESPECIALLY FOR CRUSHED  
 STONE AND GRAVEL PLANTS**

Write for Sample and Prices.  
 Kindly Mention this Paper.

**The American Fabric Belting Co.**  
 CLEVELAND, OHIO

## Fifty Cent Hand Book on **FREE** Cement Sidewalk Building

We want every Contractor and Builder to have a copy of our fifty-page illustrated Hand Book—  
**"Concrete Sidewalk Construction"**



Our new Hand-Book is just out of press, containing all points and specifications relative to sidewalk, curb and gutter construction. This book is written by one of the most practical sidewalk men in the country.

Write for this valuable Book today.

We will send you a copy FREE.

### UBBINK STEEL ADJUSTABLE FORMS

Cut Costs 2c Per Square Foot    Save 100 Per Cent Lumber Cost  
 Save 20 Per Cent of Labor Cost

**Only Adjustable Form on the Market**  
 SIDEWALK FORMS    CURB AND GUTTER FORMS

Our Proposition—Ten Days Free Trial. Order an outfit—use it ten days. Abuse it in any way and after using ten days, if it doesn't prove superior to all other makes, return at our expense. You run no risk.

**UBBINK STEEL FORM CO.** 210-216 Pier Street  
 PORT WASHINGTON, N. Y.

## "STAG" BRAND MANGANESE STEEL

WEARING PARTS FOR ROCK CRUSHERS AND CEMENT MILLS

RENEWABLE POINT DIPPER TEETH (Pat'd)

**"MISSABE" STEAM SHOVEL DIPPERS**  
 MADE ENTIRELY OF "STAG"  
 BRAND MANGANESE STEEL

**EDGAR ALLEN AMERICAN MANGANESE STEEL CO.**  
 CHICAGO, ILLINOIS    NEW CASTLE, DELAWARE



PERMANENT and THOROUGH  
 Water-proofing of Cement Work  
 results from the use of

**Maumee  
 Compound**

SPECIFICATIONS AND SAMPLES  
 ON REQUEST

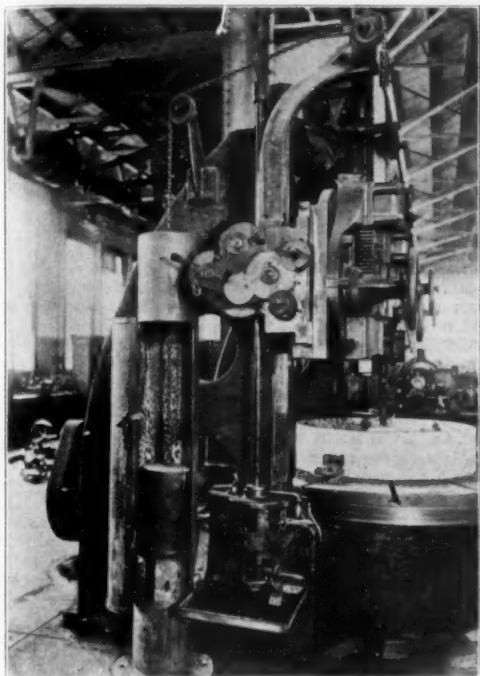
**The Maumee Chemical Co.**  
 403 ST. CLAIR BUILDING  
 TOLEDO, O.

Tell 'em you saw it in ROCK PRODUCTS



# METHODS AND APPLIANCES FOR THE PREVENTION OF ACCIDENTS IN CEMENT PLANTS.

(Continued from Page 35.)



NO. 25.

ing department. This danger is, of course, removed by not permitting any dust to escape inside of the building, and this problem has been successfully solved by taking care that all elevator casings and conveying apparatus were made dust-tight.

The above is sufficient to illustrate the first part, or what we are doing to make our plants safe if all men were careful, and I will now refer to what we are doing towards promoting carefulness among the men. When a man comes to the employment office for work, he is confronted by this sign shown in illustration number twenty-seven.

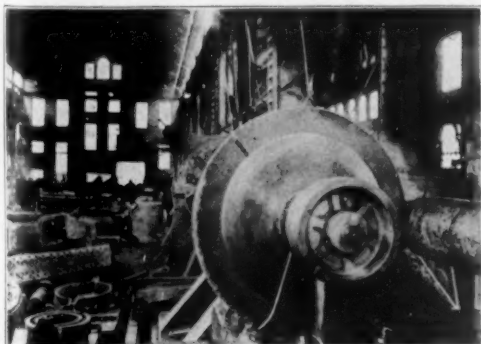
If it is a skilled workman, we require his record for at least five years. He is then given one of our books of rules on safety and is required to sign a receipt for same, which receipt can be found on the last leaf of each book and which reads as follows: "I have today received a book of rules issued by the Universal Portland Cement Company, which I shall carefully read and live up to."

These books are 4x6 inches, or of convenient pocket size. That for the superintendents and foremen contains seventy-five pages, and those for the other employees contain twenty-five pages of reading matter.

The foreman's books also contain miscellaneous data useful from the standpoint of safety, such as the safe load for the various kinds of tools and appliances, like ropes, block and tackle, and some general as well as minute instructions in regard to various problems in the mill. See cut number 27.

Illustration number twenty-eight is a page from the foreman's book.

Illustration number twenty-nine is a page from the index, indicating how much detail this book gives.



NO. 26.

UNIVERSAL PORTLAND CEMENT COMPANY

**EMPLOYMENT OFFICE**

**NOTICE**

TO MEN SEEKING EMPLOYMENT. UNLESS YOU ARE WILLING TO BE CAREFUL TO AVOID INJURY TO YOURSELF AND FELLOW WORKMEN DO NOT ASK FOR EMPLOYMENT. WE DO NOT WANT CARELESS MEN IN OUR EMPLOY.

**FIGYELMEZTETES**

MUNKAT KERD EMBEREKNEK HA NEM AKAR VIGYAZNI ARRA. HOGY ONMAGA ES MUNKATARSASERULESET ELKERULJE. ITTEN NE FOLYAMODJON MUNKAKERT. MI NEM AKARUNK VIGYAZATLAN EMBEREKET SZOLGALATUNKBAN.

**UWAGA**

DLA SZUKAJACYCH PRACY. JEZEI NIE CHCECIE ZACHOWAC OSTROZNOSCI. BY UNIKNAC SKALECZENIA SIEBIE I WSPOLPRACOWNIKOW. TO NIE PYTAJACIE O PRACE. MY NIE CHCEMY NIEDBALYCH LUDZI DO PRACY.

**Nachricht**

Fur Arbeit verlangende Manner. Wenn Sie nicht vorsichtig sein wollen. Verletzungen an sich selbst und Ihren Mitarbeitern zu vermeiden. So fragen Sie nicht um Aufstellung. Wir wollen keine unvorsichtige Manner unter unseren Angestellten.

**OZNAM**

PRE TICHI KTORI ROBOTU CHCU. KED NIE CHCEJE DAVAT POZOR NA OCHRANU VASU A DRUHICH ROBOTNIKACH. TAK NE PYTAJTE ROBOTU. MI NE CHCEME NEPOZORNICH ROBOTNIKACH.

**OBZNANA**

LJUDIMA. KOJI TRAZE RADNJI. NE TRAZI POSLA OVDJE. AKO NISI VOLJAN CUVATI SEBE I TVOJE DRUGOVE OD NESRCE. KOJA MOZE RADNIKA ZADESITI NA RADNJI. MI NE TREBAMO NEOPREZNE LJUDE NA NASOJ RADNJI.

NO. 27.

Cut number thirty shows another page from the book of rules. The twenty-five-page book for the workmen is printed in five different languages, which include all of the various nationalities in our employ who are not familiar with the English.

Safeguards are not useful if not in place, and the rules are useless if not enforced, constant vigilance is essential to keep the subject alive, and to keep up the interest and co-operation of the foremen and the men under them. This is largely a question of advertising, and to this end inspection and reports of conditions in the plants are made at regular intervals at each plant by a committee consisting of one operating, one mechanical and one electrical mill foreman. At Buffington, where three separate plants are located, a committee composed of the men from plant No. 3 for instance will inspect plant No. 4. A committee from No. 4 inspects No. 6 and a committee from No. 6 reports on plant No. 3.

Cut 31—It is compulsory for every departmental foreman to sign a report at the end of each week giving his recommendations on a blank form like that shown in illustration thirty-one.

All foremen are required to know the rules of the book, they are questioned by the safety inspector, and in passing such examination they receive a button, which is shown in illustration number thirty-two. Also any workman can obtain one of these buttons by passing an examination, our aim being to make this emblem somewhat a mark of merit

Shifting	15
Sheave Wheel Protection, Locomotive	4 b
Cranes	4 b
Shoring of Excavations	4 b
Signals, Danger—on Cranes	4 c
Signs, Danger	4 c
Signs, Danger—for Cranes	4 c
Sliding Doors, Guard Bar	4 c
Slings on Hoists	4 c
Smokstacks	4 c
Stairs and Stairways	4 c
Stairs for Cranes	4 c
Steam Lines	4 c
Stops, Portable—for Cranes	4 c
Supports for Sliding Doors	4 c
Switchboards	4 c
Switch, Limit—on Cranes	4 c
Switch, Safety—on Cranes	4 c
Tackle	4 c
Taper of Emery Wheels	4 c
Toe-Boards	4 c
Tool Boxes on Cranes	4 c
Tool Rents for Emery Wheels	4 c
Traversing Carriages	4 c
Travellers	4 c
Trolley Wires of Cranes	4 c
Trolley Frames, Safety Logs on	4 c

## CO-OPERATION OF WORKMEN.

Safety—Quality—Cost—Output.

Foremen are required to make a weekly report upon blanks which will be supplied by their Superintendent, or the Safety Department, setting forth the conditions under which they work, and suggesting changes to promote safety. A complete record as to the carelessness of Foremen and the number of practicable suggestions made by each, is kept.

Every man in a mill should consider it his personal duty to see that safeguards and signs are kept in good condition, and report damages to his Foreman or Superintendent. A record of these reports and the men making them is kept.

3. Never work on a crane or other machinery before you have notified the operator and attached a safety padlock, bearing your number, at the point where the power is turned on.

4. When you complete a job, NEVER leave tools or material lying overhead. Tear down all temporary scaffolds as soon as you are through with them. Do not allow boards with nails sticking up to lie around anywhere.

5. AFTER REPAIRING MACHINERY, ALWAYS REPLACE SAFEGUARDS BEFORE LEAVING THE JOB.

6. It is the duty of oilers to know the condition of platforms and railings, and if the same are not in safe condition, they should report the matter at once to their foreman.

7. In the lacing of belts the joints should be made close and smooth, and the laces or hooks should not be placed too near the edge of the belt. With high-speed machines, it is best to make the belts endless.

8. Before doing any work where there is danger of coming into contact with electric wires, notify the Chief Electrician, who will send an experienced man to advise concerning the work.

9. Crane hookers must walk in front of load carried by crane and see that men on floor get

14

NO. 30.

through the rank and file and one to be sought by them as a distinction.

When we make new records in production or for any reason we distribute cigars in the plant, they bear this label, shown in cut number thirty-three, and especially if a man has distinguished himself in any way to promote safety he is rewarded with a box of Universal Safety Brand.

The figures on this diagram, cut number thirty-four, include all accidents which cause a man any loss of time, as for instance if a man leaves his work on account of discomfort from dust in his eyes or a slight bruise, even if he returns to work the next day.

UNIVERSAL PORTLAND CEMENT CO.

PLANT No. \_\_\_\_\_

**SAFETY REPORT.**

191

Sup't \_\_\_\_\_ Dept. \_\_\_\_\_

Dear Sir:—

During the past week, I have taken all possible precautions for the safety of men working under me. I have cautioned all men of the possible dangers of their work, and how to avoid them, and have instructed my sub-foremen to enforce the rules and keep a vigilant watch over the safety of their men.

The following safe-guards recommended by me on \_\_\_\_\_

have not yet been installed: \_\_\_\_\_

Foreman.

SUPERINTENDENTS TO SEND TO SAFETY DEPARTMENT.

NO. 31.

NOS. 28 AND 29.

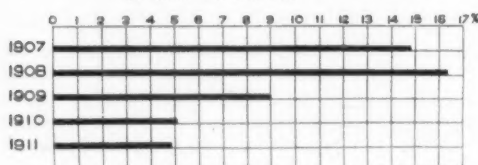


NO. 32.



NO. 33.

PERCENTAGE OF ACCIDENTS TO NUMBER OF MEN EMPLOYED



NO. 34.

During the years 1907-8 the percentages of accidents to the number of men employed ran from 15 to 16 per cent, while at the present time it does not exceed 5 per cent, or in other words, our present practice shows that during the period of one year's work only five men in one hundred are injured so as to cause them any loss of time—which proves very clearly that this work has not been wasted effort.

#### LOUISVILLE CEMENT NEWS.

Louisville, Ky., April 20.—That there will be fine demand for Kentucky-made cement during the coming summer is assured. Widespread activity is already developing, and with supplies keeping pace with the business band-wagon there should be no cause for complaint. So far as prices are concerned, there is somewhat better tone than heretofore. Local building conditions have served to open stronger quotations in Kentucky, and this feature of the situation is decidedly satisfactory to the manufacturers, despite the fact that there is no especially fine prospect for an extension of this condition all over the country during the presidential year of 1912.

The cement mills of J. B. Speed & Company, at Speed's Station, Ind., a few miles north of Louisville, have been improved through the erection of a 150-foot kiln which will enable the Speed plant to produce 3,000 barrels of cement per day with ease. The Speed mills are now running full time in every department, according to the report of

Secretary Henry Gray to Rock Products. The Louisville offices of J. B. Speed & Company at Fourth Avenue and Main Street have been extended to cover a greater part of the entire first floor of the company's warehouse. The new offices are handsomely fitted and present a handsome appearance. J. B. Speed & Company have sufficient work booked to keep them from worrying as to the immediate future. Speed Portland cement is now being furnished to the Louisville & Nashville Railroad Company for use in erecting culverts and railroad bridges along the L. & N. right-of-way from Nashville, Tenn., to Birmingham, Ala. Furthermore the company is now beginning deliveries upon one of the prize jobs of the year, furnishing about 25,000 barrels of cement to A. Bentley & Son, the Toledo contractors who are building the new City Hospital in Louisville. A third job of major importance with the Speed concern is the furnishing of several thousand barrels of cement to the Louisville Railway Company, to be consumed in laying the concrete roadbed for the company's new cross-town car line through the southern residential section of the Gateway City.

The Kosmos Portland Cement Company of Louisville, one of the most prominent in the southern field, is to be entirely reorganized in the near future. It has been announced that Samuel Horner, Jr., the millionaire Philadelphia capitalist, who owns the entire issue of common stock outstanding in the company, amounting to \$350,000, will dispose of his interests to local business men, whose identity is not divulged just at present. The move of Mr. Horner, it is announced, is entirely voluntary, as he desires to give the Kosmos company home ownership and management in view of the fact that his Philadelphia interests demand the greater part of his attention. Mr. Horner's son, who formerly had charge of the Kosmos properties, died some time ago. By the terms of the agreement submitted by Mr. Horner, his holdings, which amount to approximately \$1,000,000, will be converted into preferred shares on the 7 per cent basis and sold to parties in Louisville. This arrangement will make an increase in capitalization unnecessary, the only change in the \$1,000,000 capital being that preferred and common shares will be created. After the reorganization, when a Louisville man will be elected to succeed Mr. Horner it is stated that C. M. Dugan, who is at present general manager of the big 1,300-acre plant at Kosmosdale, will be retained in complete charge of the company's properties. The Kosmos Portland Cement Company, it is announced, will produce 800,000 barrels of cement per year shortly after reorganization, instead of 400,000 barrels as at present. Sufficient machinery will be installed to double the present capacity of the mills, which at present are developing a 1,300-acre tract, having direct transportation facilities via either the Illinois Central or Louisville, Henderson & St. Louis Railways. The company was established in 1906 by Mr. Horner, who recognized a valuable opportunity in the development of Jefferson county cement lands. His son, Robert Horner, took charge of the industry and became one of the best-posted men in the United States cement trade. Shortly after a disastrous fire at Kosmosdale in 1908, Robert Horner was operated on for a carbuncle and died. Charles Horner, secretary of the Kosmos Portland Cement Company, has been stricken with kidney trouble but is improving at his home, 413 Broad Street, in Philadelphia, Pa.

#### CHICAGO CEMENT NEWS.

Chicago, Ill., April 20.—Conditions in the cement trade are not only encouraging but good. The movement in cement has commenced earlier than was expected and shipments are heavy. There is more cement shipped at present than produced, reducing as usual at this time of the year stocks at the mills, and prices are firm and advancing. Cement manufacturers are feeling and looking cheerful and believe that they have every reason to expect brisk business for the coming season.

Fred K. Paulson of the Lehigh Portland Cement Co., took a fairly cheerful view of conditions in the cement field. He said that prices this month show more firmness and that the movement in cement was a little better.

D. Richter, western manager of the Alpha Portland Cement Co., said that prices were a little firmer this month and that the movement in cement commenced a little earlier than was expected. He believed the indications were good for a vast quantity of cement being used and produced this year.

E. L. Cox, of the German-American Portland Cement Works, said that indications were good for a brisk year in the cement field; stocks at mills were decreasing and in the same ratio prices for cement would advance. He believes the outlook for the coming season bright and expects a tendency

for a higher level in prices for cement to obtain as the busy building season approaches.

Gold Williams, sales agent for the Marquette Cement Manufacturing Co., takes an encouraging view of conditions in the cement trade. Prices are firmer and higher than they were a month ago, with a steadily advancing tendency. Stocks at mills are fairly heavy, but more cement is being shipped than produced, lowering stock, which is usual at this time of the year. The outlook in general for the coming season he says indicates great activity.

B. F. Affleck, sales manager of the Universal Portland Cement Co., says that they will have shipped more cement at the end of this month than any one month last year. Shipments are heavy, the demand is good, and prices are not only firm but steadily advancing. Prospects are exceedingly bright for the coming season.

J. U. C. McDaniel, sales and traffic manager of the Chicago Portland Cement Co., was found up to his neck immersed in business looking after shipments and taking orders, which seem to come in from every direction. Prices he stated were firm and advancing and that conditions in the cement trade generally are more than good. His company has all the business that it can comfortably attend to.

Geo. W. deSmet, distributor of Vulcanite Portland cement and waterproofing compounds, stated that the main trouble with the conditions here were the low prices for all building material. There is a good demand for cement and the volume of trade for the coming season no doubt will be satisfactory.

The Riverside, Cal., Portland Cement Company has been making extensive improvements in its plant for the last month or two and will bring its capacity up to 6,000 barrels per day. The principal machinery consists of four Allis-Chalmers tube mills with electric motors. A large and expensive dust-retaining device is also being installed.

The Universal Portland Cement Company's plant at Buffington, Ind., was recently visited by the junior and senior chemical students, graduate students and the chemical staff of chemical engineering from the University of Illinois at Urbana, Ill.

#### THE EMPLOYER'S TEN DEMANDMENTS.

- 1.—Don't lie; it wastes my time and yours. I'm sure to catch you in the end, and that's the wrong end.
- 2.—Watch your work, not the clock. A long day's work makes a long day short, and a day's short work makes my face long.
- 3.—Give me more than I expect and I'll pay you more than you expect. I can afford to increase your pay if you increase my profits.
- 4.—You owe so much to yourself that you can't afford to owe anybody else. Keep out of debt or keep out of my store.
- 5.—Dishonesty is never an accident. Good men, like good women, always scorn temptation when they meet it.
- 6.—Mind your own business and in time you'll have a business of your own to mind.
- 7.—Don't do anything here which hurts your self-respect. The employee who is willing to steal for me is capable of stealing from me.
- 8.—It's none of my business what you do at night, but if dissipation affects what you do next day, and you do half as much as I demand, you will last half as long as you hoped.
- 9.—Don't tell me what I'd like to hear, but what I ought to hear.
- 10.—Don't kick if I kick. If you're worth correcting you're worth keeping. I don't waste time cutting specks out of rotten apples.—Exchange.

The Cleveland Chimney Company, of Cleveland, Ohio, has been incorporated with a capital stock of \$10,000 to deal in brick, concrete and metal chimneys. The incorporators are James E. Hoefler, S. W. Lohr, Fannie Hoefler, Alphonso G. Roasok and E. N. Selby.

Irwin & Son, of Roswell, Tex., have been awarded contract by the Clark Land Company to erect a large concrete dam near Red Bluff.

The Concrete Brick & Tile Company has been incorporated at Fresno, Cal., with a capital stock of \$35,000, by J. E. West, G. E. Waddell, Ralph Price, C. E. Johnson and W. W. Welch. The company has opened offices at 1140 J street, Fresno.

The M. Hughes Company, concrete contractors, of Sacramento, Cal., have moved a lot of equipment to Oroville, Cal., where they expect to be occupied all summer on sidewalk work.





## THE SAMPLE MAN.

By J. T. Brazil.

A plaster mill and a steam boat  
Are very much the same  
In regard to the men who run them  
Just a difference in the name.

The Superintendent is the Captain,  
The foreman is the mate.  
There are engineers and roustabouts  
At a mill that is up to date.

The sample man is the pilot  
To keep them off the rocks,  
And he's the unlucky victim  
That everybody knocks.

From the time the car is loaded  
Till the plaster is on the wall,  
If everything is not just right,  
He is sure to get a call.

From an angry Superintendent,  
With a letter in his hand,  
Who jumps into the sample room  
Like a half-a-ton of sand.

"I have just heard from Billy Burk,  
Our top notch traveling man,  
He says that car is rotten,  
We shipped Leppencot & McCann."

If the dealers' warehouse is leaky  
And one-half the sacks are set,  
Or the country has a panic  
And orders are hard to get.

If the laths are as dry as a cracker  
And warped like a picket fence,  
And the plasterer was a bone-headed  
With only about half sense.

If the mortar is made with sewerage  
Or the sand is one-half clay,  
Or the house is closed up tightly  
On a hot and sultry day.

If the shipping clerk is boozing  
Or the watchman you must can,  
And you cannot take a joy ride  
Go cuss the sample man.

## F. A. JONES GOES TO GERMANY.

F. A. Jones, consulting engineer, with offices in the Federal building, Youngstown, Ohio, sails on the Kaiser Wilhelm II, April 30, for Ellrich, Germany, to start in operation a large plaster mill that he designed last year and which is now ready to operate.

This mill is equipped with a large Cummert Rotary Calciner which will replace several of the kettles in use at present.

The company building this mill has been in operation for the past forty years, and have always used the small two-ton kettles of which they have some 30 in operation.

Last May several of the officials made a tour of this country inspecting the methods employed here in calcining plaster, and after visiting several mills decided to adopt the Cummert rotary system, and made arrangements with Mr. Jones to design the mill, and go to Germany to start it, and teach them the rotary process.

Mr. Jones while there expects to make a study of the methods of manufacturing the special grades of fine moulding plaster, Keenes cement and Estrichgyps, of which the mills of Ellrich have a world-wide reputation, and expects to be able to duplicate these brands in this country.

The Mound House Plaster Company, San Francisco, Cal., are manufacturers of the Colonial wall board and plaster. They have a capacity of 5,000 boards per day. They are going to install a two-kettle calcining plant at Emeryville, in conjunction with the present wall board factory, and will also manufacture asbestos wall board and plaster blocks under the Voglesong process and patents. J. W. Voglesong is general manager of the Mound House Plaster Company.

## NEW MILL

## The Kelly Plaster Company Have About Completed a Gypsum Plant at Castalia, Ohio, Which Presents Many New Features.

The Kelly Plaster Company, of Sandusky, Ohio, have about completed their large mill at Castalia, and expect to have it in operation within the next month. It will manufacture various grades of hard wall and finishing plaster, and in addition will have a capacity of 250 tons of crushed rock per day. The mill is located two miles north of Castalia and the company owns their own electric locomotive for conveying cars from L. E. & W. railroad at Castalia to the mill for loading and delivering them back to the railroad for shipment.

The main building, which is 265 feet long by 50 feet wide and 40 feet high at side columns, with a total height over the roof of 73 feet, is of steel construction throughout, with steel storage bins and steel elevators, conveyors and framing for kettles and machinery.

The mine adjoins the south end of the mill, with the tippie rising 50 feet above the surface, where the rock is automatically weighed and discharged into a 300-ton bin, from which it is fed into the crusher by gravity. There are three veins of pure white gypsum rock from four to eight feet in thickness, which analysis shows to be of a very high grade. The entries are being driven into the eight-foot vein and the company already has over 3,000 tons of rock mined and stored on the surface of the ground, where it will be held and used only in case of a breakdown in the mine which would prevent hoisting for a short period.

The equipment of the calcining mill consists of a 300-ton Cummert rotary calciner and two specially designed kettles of 15 tons capacity each, with a further provision for installing a third kettle in thirty days' time, as the foundation and supports are already in. In the installation of the kettles some original methods have been employed, which will increase their efficiency. The kettles are built upon heavy, solid concrete foundations and the gearing and kettle shafts are all hung independent of the kettles upon 15-inch "I" beams, which are riveted solid and supported upon independent concrete foundations, making an absolutely rigid support and insuring that the kettle shaft and gearing will always be held in line.

The kettle shaft is supported upon a specially designed ball thrust bearing, which fits over the flanges of a twenty-inch I beam, and has a vertical adjustment of three inches, so that the shaft can be raised or lowered while the shaft is running, and not interfere with the operation of the kettle.

The rotary calciner is the largest ever installed, and is supported upon double trunion rolls of the cradle design, such as is used in connection with the largest rotary cement kilns.

The bed plate of these trunions and gearing is made up of six ten-inch Bethlehem H beams, which are capable of standing five times the load that will be put upon them.

The storage bins have a capacity of two thousand tons of calcined stucco, and are supported eight feet above the packing room floor upon a solid steel substructure, and by this arrangement the stucco can be drawn from any of the storage bins through sacking machines, and be loaded upon the cars without rehandling.

The mill throughout will be operated with individual electric motors, which gives flexibility to the mill, as any department or machine can be stopped without interfering with the rest of the mill.

The cages of the mine will be operated by a large direct connected electric hoisting engine of the Otis Elevator type, and has a capacity of hoisting a cage loaded with two tons of rock every two minutes.

The electric power for operating the mill and electric locomotive is taken from the main line of the Lake Shore Electric Railway at Castalia, Ohio; the high tension is brought to the transformer house at the mill at 18,000 volts, and here transformed down to 440 volt 25 cycle, three phase A. C. current, and connected up to heavy mill type Allis Chalmers induction motors in the different parts of the mill.

The current for operating the locomotive is taken direct from the 500 D. C. trolley line of the Lake Shore Electric Railway at Castalia and runs to the mill, and over the different switches at the mill and Castalia. The locomotive is a 20-ton Jeffrey type, and is capable of hauling ten loaded standard railroad cars.

The company has let contracts for two 250 H. P. vertical Wicks water tube boilers, and will main-

tain a steam plant, so that in case of failure of the electric power they can start and operate with steam, thereby insuring to their customers that all orders will be promptly filled.

No expense has been spared in the building of this mill and it is one of the best equipped mills in this country. It will have a capacity of 500 tons per day of calcined plaster mixed into the different grades of wall plaster, in addition to being able to ship 250 tons of crushed rock for the cement trade.

In the mixing department the No. 1 Broughton mixers will be used, and will be equipped with the Bates Valve Bag Filling Machines.

The company is very strong financially and numbers among its stockholders many prominent and successful business men of Butler, Pa. The officers of the company are: President, D. K. Albright, Butler, Pa.; vice-president, J. C. Cambell, Butler, Pa.; treasurer, J. F. Anderson, Butler, Pa.; manager sales, S. C. Kelly, Sandusky, Ohio; manager operations, F. C. Anderson, Sandusky, Ohio; superintendent, Albert Swanson, Castalia, Ohio; master mechanic, George Rauschenberg, Castalia, Ohio.

The mill was designed and built by F. A. Jones, M. E., Federal Building, Youngstown, Ohio, who has built several of the largest plaster mills in this country, Canada and Germany.

With this finely equipped mill, the Kelly Plaster Company will commence operations under the most auspicious conditions.

## THE FLORENTINE ALABASTER COMPANY.



Chicago, Ill., April 20.—This company was organized eight years ago and since that time has gained a national reputation for reproducing classic statuary; works of modern sculptors and novelties. In the last two years it has gone extensively into manufacturing cement flower boxes, jardinières and garden furniture, which find a ready sale in leading establishments throughout the country. It has lately created an exceedingly

large demand for its globes made of Portland cement for inverted lights used and placed in hotels. It reproduces all the classic statuary and relief work made in alabaster for schools, colleges and homes. Last month it executed an order of 6,000 little paper weights in the form of the famous Missouri hound, having the inscription on the base: "They gotta quit kickin' my dawg aroun'." This "dawg" is made of plaster of Paris with an ivory finish. The order for this paper weight was given by a large firm and the little "dawg" will be used for campaign purposes. Another large order for a paper weight this company received, is in the form of "Teddy" seated on a recumbent elephant, with this inscription: "They're beat to a frazzle." Miss Louise Hirtzel, the presiding genius and founder of the Florentine Alabaster Co., 5 E. Kinzie street, Chicago, says she has absolutely no competition when fine goods are wanted. The company has also received an order for a Suffragette group statue of five figures, made of plaster of Paris composition; the model of which was made by Miss Ella Buchanan, of Kansas City, a student of the Chicago Art Institute. These statues will be placed in all the club rooms of the suffragettes in this country. Miss Hirtzel said that she expects to have a big sale of this suffragette group, as many orders have already come in which are merely precursors of a big demand in the future. She says business looks exceedingly bright for this year.

## LOUISVILLE PLASTER NEWS.

Louisville, Ky., April 20.—The situation for the past month in the Falls Cities wall plaster field has been quiet, owing to a strike of plasterers which has tied up the trade to a considerable extent. The outlook for an immediate settlement of the labor troubles is not particularly good, inasmuch as both sides are standing pat, but it is believed that the constantly increasing volume of work which is piling up will effect an agreement between the opposing parties more quickly than might be expected at present.

The Louisville Wall Plasterers' Union has declared a strike, demanding an increase of \$1.00 per day in wages. The scale demanded by the plasterers is \$6.00 per day of eight hours, as opposed to the \$5.00 wage schedule which has ruled for some time. The plaster manufacturers and contractors have steadfastly refused to grant the demands of the workmen, although several conferences between representatives of the conflicting parties have been held. Consequently active work during April, the first month of good weather that has been offered the local trade this year, has not assumed normal proportions.

## GYPSUM PLASTER ON METAL LATH

### The Behavior of Iron and Steel in Contact With Gypsum.

By S. C. WEBB.

Objections are often met with to the use of gypsum plaster in contact with metal lath or steel. These objections when inquired into are usually found to be based upon prejudice alone, but objections are sometimes met with based upon isolated cases where the iron or steel lath in contact with gypsum plaster has been corroded. In these cases the observers, viewing the particular cases in a superficial manner and taking no cognizance of any other factors, have jumped to the conclusion that gypsum plaster has a particularly bad effect upon steel or iron. Curiously enough such conclusions are not arrived at when metal lath is found corroded when plastered with lime or Portland cement mortar. Why this discrimination against gypsum?

A brief presentation of this subject in your columns for the benefit of your readers seems entirely opportune because the same misconception has been given expression in the suggested specifications for "Stucco on Metal Lath," by H. B. McMaster, which appeared in your March issue.

#### Suggested Specifications Confusing.

This suggested specification, having back of it the weight of the influence of the Associated Metal Lath Manufacturers, may tend to confuse and implant uneasiness in the minds of some building material dealers who sell to their trade both metal lath and calcined gypsum or hard wall mortar.

Unfortunately Mr. McMaster has left the impression, doubtless without intention, that calcined gypsum plaster is unsuitable when placed upon metal lath, either for exterior or interior work, although presumably the intention was to recommend specifications dealing entirely with exterior work.

It is not disputed by any competent observers that calcined gypsum plaster should not be used upon metal lath universally and everywhere for exterior work. Unfortunately it is hard to distinguish in general specifications between the behavior of different materials under different conditions of climate, humidity of atmosphere, etc., and for this reason, the recommendation for the use of calcined gypsum plaster upon metal lath for exterior work is invariably withheld, although experience in dry climates has shown no objection whatever to its use.

#### Question of Access of Damp Air.

The writer believing that the question of corrosion of metal was a question of the access to the metal of damp air and was wholly irrespective of the character of plastering material used, whether Portland cement, lime, or cement and lime mixed plasters, or gypsum plaster, about two years ago conducted a country-wide investigation into this subject to learn the actual behavior of metal laths when used for exteriors and when covered with different kinds of plasters.

The investigation disclosed the fact that in damp locations, particularly on the sea coast and in the Mississippi valley, that the corrosion of the metal lath was relatively great, and that this condition was irrespective of what kind of plaster had been used. On the other hand, in higher altitudes and drier parts of the country, the corrosion of the metal lath was practically nil, also irrespective of the kind of plaster used.

This investigation was made entirely upon the behavior of metal lath when used as a lathing base for exterior plaster work, and the observations included ingot iron unpainted lath, painted steel lath, galvanized lath and also plasters of different compositions, including Portland cement and gypsum.

Isolated experiments covering periods of lime running into the years, in dry and damp locations, have been made upon metal laths of different types, gauges and composition of metal, from low carbon irons to the high carbon steels and with different kinds of protection when covered with gypsum plasters.

These experiments have clearly confirmed the above conclusions and show that the question of preventing corrosion is a question of keeping damp air from coming into contact with the iron or steel, irrespective of whether Portland cement, lime or gypsum plasters are used.

As pointed out above, the suggested specifications for "Stucco on Metal Lath," offered by Mr.

McMaster as the recommendation of the Associated Metal Lath Manufacturers are confusing because they seem to indicate that calcined gypsum or hard wall plasters should not be used anywhere, either outside or inside of a building, when in contact with metal lath, and in the interest of truth and justice, this erroneous impression should be corrected.

#### Have Been Successfully Used.

There is no question whatever that gypsum or hard wall plasters have been successfully used for interior work, where the construction is dry, in contact with metal lath.

It seems to be a reasonable requirement to make of the manufacturers of metal lath that they should protect their metal lath by coatings that would prevent the access of damp air to the iron or steel.

That the protection of many metal laths is insufficient seems to be recognized by Mr. McMaster in the specifications referred to, because, quoting from his specifications, he says, "Care should be taken not to expose the lath to the weather while it is lying about the building." Again he says, "The lath should be painted to protect it until it can be applied and covered with Portland cement plaster." He further seems to recognize that metal lath should be kept from moisture, even when covered by Portland cement, because, in speaking of exterior work, he states, "Lath and plaster should not be carried all the way down to the ground," evidently desiring in this way to protect the lath from ground moisture.

The writer of this article entirely concurs with the suggested specifications in the suggestion that the metal lath should be entirely imbedded in plaster, although he does not concur in the suggestion that this should be Portland cement mortar and only Portland cement mortar.

The writer has in mind a sample of naked metal lath that was imbedded in gypsum plaster and allowed to remain in a damp location for 2½ years. A critical examination of this sample showed that where the metal was entirely imbedded no corrosion occurred, but that where the damp air was able to have access to the metal, corrosion did occur.

#### Misunderstanding Regarding Stucco.

It is very unfortunate, in considering this subject, that there is so much misunderstanding as to the exact meaning of the word "stucco." Originally and even today the word "stucco" indicates that the material is composed of Plaster of Paris. A transition from this definition, to a meaning embracing all character of plastering on exterior surfaces, seems to have taken place, and Mr. McMaster in his views seems to have this thought, although it is distinctly confusing when many people believe "stucco" to be Plaster of Paris, others Portland cement and still others, any plaster when used for exterior work.

#### BUFFALO PLASTER NEWS.

Buffalo, N. Y., April 20.—Trade is on the boom again in the plaster world of Buffalo. With the cessation of the extreme cold, business is going forward with great impetus.

The M. A. Reeb Company, doing a general supply trade, look forward to a busy year. Among their contracts are the General Electric Company's building, Shea's Theater, Buffalo Gas Company's plant, the Deaconess Hospital, etc. This firm has also a number of large contracts for furnishing plaster board, a notable one being the Edison building in New York City, which after rigid tests decided in favor of the Peerless.

The Paragon Wall Plaster Company, with offices at 500 Michigan street, Buffalo, report plenty of contracts, and while handicapped for a time by the elements, are now "going to it" with a rush. One of its largest orders is the furnishing of material for the Wheat's Ice Cream Company building, a massive concrete structure.

The Niagara Gypsum Company, of Buffalo, has been awarded several contracts of especial mention and foresee a year of activity. Among the most notable may be mentioned the Oswego, N. Y., normal school, the municipal building of Springfield, Mass., the Richmond Hotel, of Richmond, Va.,

and the Grand Central Terminal, of New York City, involving contracts of almost \$2,000,000 in the aggregate.

The United States Gypsum Company, of Chicago, is contemplating an expenditure of \$100,000 on the improvement of its large plant at Plasterco, Va. The work is to begin at once.

The Cleveland Plaster Company will erect a new building at Gypsum, Ohio, to cost \$6,000.

The Great Western Cement, Sand & Stone Company, of Byron, Ill., is installing machinery preparatory to enlarging their capacity.

All the improvements at the plant of the Sunset Plaster & Cement Company at Fillmore, Cal., are now complete and the company started production at regular capacity early last month.

#### ILLINOIS STATE FARMERS' INSTITUTE INTERESTED IN CONCRETE.

The Illinois State Farmers' Institute promises to become one of the most effective agencies for the promotion of the cement industry in Illinois.

Exhibits of manufacturers of blocks and posts at these farmers' meetings have often been described in ROCK PRODUCTS. Dealers and contractors have found this kind of publicity profitable. In the early days of the Illinois Farmers' Institute meetings nearly every session had a speaker who told of the possibilities of concrete upon the farm. Last year there were few; there was a shortage of practical speakers upon all subjects.

"Most of the speakers at these meetings were instructors at the University of Illinois," said Secretary H. A. McKeene, of the State Institute. "The institutes grew so fast in numbers that we could not secure speakers without crippling the state school. This year we shall have talks by men who have made scientific farming pay dividends." In a bunch of letters he had from practical farmers there were several who wished to talk on concrete. "We are glad to have representatives from the big cement companies appear upon our program," he said. "Their talks are practical; we tried it successfully this year. Of course, they must not advertise any special brand from the platform, but there is no objection to distributing literature or to any newspaper publicity they may secure."

The Universal Portland Cement Company did some good work along this line at the meeting of the Stephenson county farmers' institute in Freeport, Ill., last fall. Emory S. Fowler was listed for an afternoon address on "Concrete on the Farm," and a stereopticon lecture at night on "Uses of Cement." His place was filled by Arthur J. Curtis, field agent for the Universal, who explained in convincing words the durability of concrete construction and with the gravel easily accessible, its cheapness. Selection of materials, mixing and placing were illustrated by charts.

Officers of the Montgomery county, Illinois, short course in agriculture which will be held December 9 to 13 have decided to have a representative present from one of the big Portland cement companies. The coming generation of farmers is being educated at these schools—a great field for the cement man.

Another thing little known or taken advantage of is that many inquiries for information about concrete reach Secretary McKeene's office. "When such requests come we generally mail them what we have—a booklet from a cement company."

The American Stone Company, of Cleveland, O., has been incorporated with a capital stock of \$10,000 to deal in artificial and ornamental stone materials and products. The incorporators are W. A. Fay, J. A. Taylor, W. C. Saegar, K. E. Ford and M. T. Flanagan.

Martin & McCullom will open a concrete block plant at Palmyra, Ill., this spring.

The Marriett Concrete Company has been incorporated at San Diego, Cal., with a capital stock of \$80,000, by A. S. Marriett, L. E. Carter and E. A. Marriett.

The Arthur S. Bent Contracting Company, of Los Angeles, is working on a large order for concrete pipe for an underground irrigation system, which the Kuhn irrigation syndicate is installing near Willows, Cal.



# SAND AND GRAVEL

NATIONAL ASSOCIATION OF SAND AND GRAVEL PRODUCERS.

Meets Annually.

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H. H. Halliday, Halliday Sand Co., Cairo, Ill. .... First Vice-President  
W. F. Bradley, Ohio & Michigan Sand & Gravel Co., Toledo, Ohio. .... Second Vice-President  
H. F. Curtis, Lyman Sand Co., Omaha, Neb. .... Third Vice-President  
Lee R. Witty, Wabash Sand & Gravel Co., Terre Haute, Ind. .... Fourth Vice-President  
J. J. Neary, Utica Fire Sand Co., Utica, Ill. .... Fifth Vice-President  
C. H. Brand, Atwood-Davis Sand Co., Chicago, Ill. .... Treasurer  
B. F. Lippold, Rock Products, 537 S. Dearborn St., Chicago, Ill. .... Secretary  
C. H. Stebbins, }  
N. C. Fisher, } ..... Directors for two years  
A. Y. Reed, }  
P. A. Stewart, }  
T. E. McGrath, } ..... Directors for one year  
G. W. Bunker, }

## THE STANDING COMMITTEES.

C. H. Stebbins, }  
W. F. Bradley, } ..... Uniform Classification  
P. M. Lewis, }  
Joseph Hoch, }  
H. C. Cary, }  
C. B. Sheffer, }  
P. M. Lewis, }  
E. S. Davis, } ..... Transportation  
W. F. Bradley, }  
R. Snoddy, }  
R. Snoddy, }  
W. C. Jones, } ..... Co-operation  
H. C. Cary, }

Official Organ.....Rock Products

When the National Association of Sand and Gravel Producers was formed they issued a booklet which is no doubt familiar to all the members of the association and a great many producers of sand and gravel in all parts of the country. The cover of this booklet was a photographic reproduction of sand and gravel and was an exact copy of what is termed No. 4 sand passing through a five-sixteenth inch round hole, and No. 2 gravel, which is material passing through a one and one-fourth inch round hole, everything under one-half inch being taken out. These two illustrations were used to illustrate the different kinds of material produced by the Washed Sand & Gravel Company, of Minneapolis, Minn., and it was an oversight on the part of the secretary of the Sand and Gravel Association not to mention this fact at the time.

## FINDS THE PAPER NECESSARY.

V. O. Johnston is now general manager of the Sabula Sand & Gravel Company, of Sabula, Iowa. Mr. Johnston was general manager of the Lincoln Sand & Gravel Company, of Lincoln, Ill., for the past four years. The Sabula Sand & Gravel Company is located on the C. M. & St. P. railroad, which reaches such cities as Davenport, Dubuque, Rock Island, Moline, Clinton and Freeport. Its plant is being constructed by Raymond W. Dull & Co., Aurora, Ill., and will have a capacity of twenty cars per day. Mr. Johnston says prospects for business are excellent.

Speaking of ROCK PRODUCTS, he says, "during the past four years I have found ROCK PRODUCTS necessary if I kept in touch with the progress of our industry, and in entering this new field I do not want to start without it."

The Noel Gravel & Sand Company, of Noel, Mo., is making some extensive improvements at its plant. The Webster Manufacturing Company is installing one 400-foot horizontal belt conveyor with tripper and one 100-foot inclined belt conveyor which will load twenty cars per day. This company has some rather large contracts for material during the coming season.

## CHICAGO SAND AND GRAVEL NEWS.

Chicago, April 20.—Notwithstanding discouraging conditions which sand and gravel men had to face last winter and this spring, they feel cheerful concerning business with the approaching coming season. There are indications that the demand for sand and gravel in Chicago will be greater than last year. Building operations, particularly in the loop district, will be on a more extensive scale than those of last year. More than a dozen great buildings in the loop district are practically started and many more are projected which practically have gone beyond the point of projects. It is confidently believed, with labor troubles out of the way, this will prove one of the big building years in Chicago. Prices, to be sure, are unreasonably low, but the feeling exists that once things commence to move prices will advance enough to leave a fair margin of profit.

F. M. Richardson, president of the Richardson Sand Co., with offices in the Chamber of Commerce Building, said that sand and gravel men have had a most strenuous time this year. In the first place, the hard winter held things back in the spring; then railroad rates were raised on sand one-half cent per hundred pounds, to take effect March 15. These rates were suspended March 7 and reduced to the old rates in April. This talk, however, of raising rates and the consequent uncertainty attending this movement, prevented sand and gravel men from making or taking any contracts. Then the strikes in March and April were another blow, keeping business back. With these things out of the way, however, he believes that the coming season will be an active one and that prices, which now are ridiculously low, will naturally stiffen when business commences to move.

P. M. Lewis, secretary and treasurer of the American Sand & Gravel Co., with offices in the Chamber of Commerce Building, on the ninth floor, said that up to the present time, on account of the hard winter and late spring there had not been much business. Also the proposed raise in railroad rates, which were to take effect in March, but had been suspended, had the effect of keeping sand and gravel men from making or taking contracts. Prices are lower than they have been for some years, but believes they will naturally stiffen when things commence to move. He said an immense amount of building, greater than that of last year was going on in the loop and indications were that this would be one of Chicago's big years in building circles. He believed that conditions were good for expecting a very busy season and that the troubles of the sand and gravel men were now practically things of the past.

C. H. Stebbins, of the Lake Shore Sand Co., with offices on the third floor of the Chamber of Commerce Building, said that the hard winter and the proposed increase of rates by railroads and the labor troubles had kept business at low ebb longer this year than he could remember. With these conditions out of the way, he expected a fair year. During the past four weeks, this company has been doing 60 per cent of the volume of business it did last year.

C. H. Brand, president of the Atwood-Davis Sand Co., with offices at 112 W. Adams street, takes a very hopeful view of business for the coming season. He recognizes the fact that prices are lower than they have been in the past two years, but believes that when business starts up, a reasonably fair advance will be seen. He spoke of the many large buildings that will be started in the loop district this summer which will require large quantities of sand, and everything pointing to great activity in building circles of which naturally the sand and gravel men will receive their share.

Chris Logsdon, 617 West Main street, Beardstown, Ill., has embarked in the sand business. He has equipped a barge and has purchased machinery for pumping near Browning on the Illinois river. The storage yard will be at Beardstown.

The stockholders of the Moline Sand Company, of Moline, Ill., elected the following directors: Capt. J. P. Pearson, Emil Carlson, C. C. Loptein, W. A. Meese and J. O. Johnson. Captain Pearson was elected president and treasurer as well as general manager of both the sand company and the Moline Channel Ice Company, an allied concern. Mr. Meese was elected vice-president and C. C. Loptein secretary.

The Lincoln Sand and Gravel Company, of Lincoln, Ill., has leased a locomotive from the Alton railroad to be used at its plant.

Wisconsin sand and gravel dealers are much interested in the fact that the interstate commerce

commission has suspended until July 13 rate increases varying from 15 to 50 per cent recently filed by the Chicago & Northwestern and Chicago, Milwaukee & St. Paul railroads. Waukesha and Janesville will be affected most, as much sand and gravel is shipped from these places to Chicago, the objective point of the decision.

## PITTSBURGH SAND NEWS.

Pittsburgh, Pa., April 20.—Sand and gravel firms anticipate a very busy summer. They have been held up more the past winter by the weather than at any time before for ten years. The main complaint is a scarcity of cars, especially on the B. & O. and P. & L. E.

The Rodgers Sand Company has rebuilt one of its diggers and will have it working again next week. Its other diggers are very busy. The company reports considerable government work down the Ohio and says that prospects throughout the Pittsburgh district are decidedly better than last year.

The Enterprise Sand Company has its plant at Conneaut, Ohio, running in good shape. Its trade in foundry sand is fairly satisfactory and its officials believe that prospects are good for a nice business year.

The Portsmouth Sand & Gravel Company, capital \$25,000, has been formed at Portsmouth, Ohio, one of the best down river towns in this district, by John M. Russell, Vesta Stockham, Simon Labold and R. S. Micklethwaite.

The sand mill at Lopez, Pa., is being remodeled and new machinery put in with a larger capacity. The company is also arranging to wash its sand in order to increase its market.

J. F. Silva, owner of the Boswell Sand Company at Boswell, Pa., has bought a large sand crusher for its plant. This will have a capacity of nearly 100 tons per day of pulverized sand. The Boswell Sand Company is now employing twelve men and will probably double that number in a few weeks. It has the contract for supplying the United Coal Company with all the sand for its mines.

W. L. Forney and W. L. Craig, of Paynesboro, Pa., are forming a company with a capital of \$25,000 to develop extensive sand banks at Pond Bank, Pa. New machinery will be installed this spring.

The Imperial Sand Company of Buckhannon, W. Va., has been formed with a capital of \$50,000 to mine stock on an extensive scale. It is about to purchase considerable sand plant machinery.

The Pennsylvania Glass Sand Company at McVeytown has announced that its workings will be abandoned. The company employs about forty men there. The roofs of many of the rooms in the old workings have crumbled away so that cave-ins are frequent and recently greatly endangered the lives of the miners. Experts say that the deposit is about worked out.

The Juniata Sand Company has put in much new machinery at its plant on the Juniata river near Lewistown, Pa., and is also having large barges built to haul the sand cars right by the river front where it will be loaded at the new pier the company has recently erected.

The Diamond Sand Company has bought property at New Castle Junction, Pa., and will start operations soon. The leading man in the company is Horatio Dohrman of Steubenville, Ohio.

The National Sand & Gravel Company has all its barges working on the Allegheny river, but complains badly of the scarcity of cars.

The Iron City Sand Company has its entire fleet busy. Recently the company has secured some splendid contracts in the Youngstown, Ohio, district and announces that work in that section of the state is going to be heavy all summer. It is also furnishing sand for the Dravo Contracting Company which is erecting the Point bridge at Pittsburgh. Yard trade, according to this company, is increasing rapidly and prospects for a good year are much better than in April, 1911.

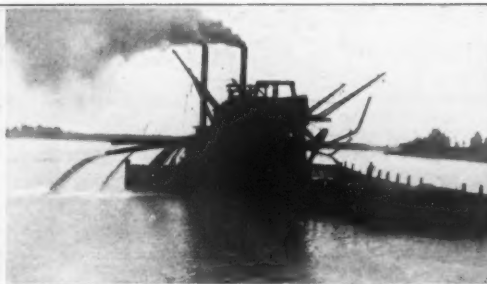
The Winfield Sand Company is running its plant at West Winfield, Butler county, Pa., steadily and is getting out a splendid lot of fine glass sand. Its trade in builders' supply sand is coming right up this spring and its prospects are excellent for a good year.

The Ellwood Sand Company has its plant at Ellwood City, Pa., running full, getting out silica and molding sand. It has no trouble in selling all it can make.

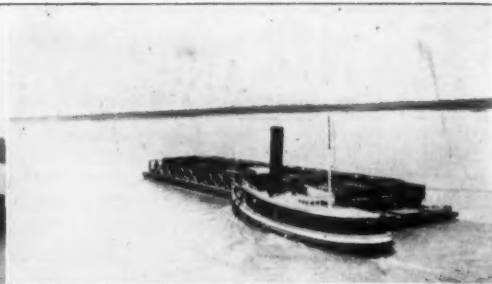
The Summitt Silica Company, of Barberton, Ohio, has been incorporated with a capital of \$50,000 by E. E. and E. P. Otis, S. S. Blier, J. P. Walsh and others. The company has leased a large tract of land near Barberton, and will put up a plant with modern machinery soon for the mining and manufacturing of silica sand.



TUG "BAYSINGER" STEAMING TO THOMPSON'S PLANT ON PROFIT ISLAND.



THOMPSON'S DREDGE LOADING SCOW WITH GRAVEL AT PROFIT ISLAND.



TUG "J. W. THOMPSON" DELIVERING A TRAINLOAD OF BALLAST ON TRANSFER BARGE FOR ILLINOIS CENTRAL R. R.

#### NEW ORLEANS SAND AND GRAVEL PRODUCERS.

New Orleans, La., April 15.—This city is a great producing and distributing center for sand, gravel and shells, vast quantities being used in New Orleans for building purposes, for street improvements and for railroad grading. This material is secured within a radius of 100 miles of the city; for instance, across Lake Pontchartrain, eighteen miles up the Tchefunctia river, white sand is se-

The Jahneke Navigation Company, of New Orleans, La., is perhaps the largest of these sand and gravel producers. It operates a fleet of tug boats, sand suckers, dredges and barges, nearly fifty in number. It produces and handles sand, gravel and shells and takes contracts for dredging and towing in the Gulf of Mexico, the Mississippi and smaller rivers contiguous to New Orleans. It operates six yards in various parts of the city, all

of this hoisting machine carries five yards of gravel and sand; the conveyor discharges the sand and gravel into the bins containing five thousand yards, at the elevator from which the material is loaded by gravity into cars. Mr. Thompson owns and operates a switch engine and forty cars. He is now supplying the Illinois Central railroad with sand and gravel on a contract awarded some time ago and is starting in to furnish 1,000,000 yards of bal-



JAHNEKE'S YARD, FOOT PETER AVENUE SHOWING DREDGE, BARGE AND BOAT.



SAND BARGE UNLOADING AT ONE OF JAHNEKE'S YARDS.



SAND SCHOONER GOING TO HORN ISLAND FOR SAND IN GULF.

cured; up the Pearl river, sand of reddish color is dug from immense sand banks, and for pure silica sand used for filtering purposes and in the manufacture of glass, vessels are sent to Horn Island, one hundred miles in the Gulf of Mexico, while on lands up the Tangipahoa river on the other side of Lake Pontchartrain boats pump shells out of practically inexhaustible deposits used on roads running out of the city for macadamizing purposes.

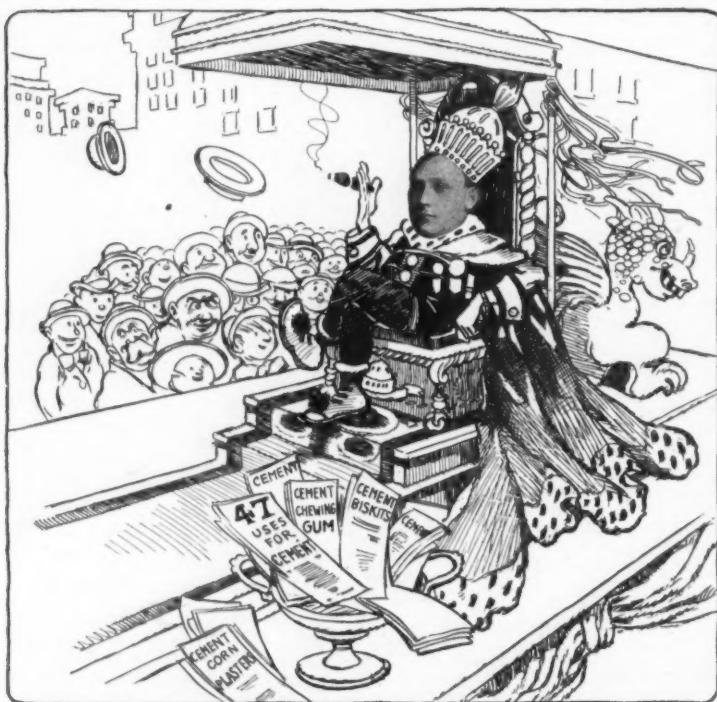
located on some of the various railroads entering New Orleans with water fronts on either the Mississippi river, the new or old basin canals; and two land plants at its sand and gravel pits some miles distant from the city located on the Illinois Central, the Northeastern railway and the New Orleans Great Northern railway. It owns a shipyard where all the boats and dredges used for carrying sand, gravel and shells and for towing purposes are built, besides

J. W. Thompson, with offices in the Hibernian Bank building, 209, New Orleans, La., is one of the heaviest producers and operators in sand and gravel in this city. One sand yard located at Thalia street and the river contains bins which have a capacity of twenty-five hundred yards of sand. He owns and operates a fleet at Profit Island, consisting of three dredge boats, three tugs, two steel transfer barges and nine scow barges. The steel barges are used for transferring ballast gravel to the Illinois Central railroad, while the scow barges are used for transferring sand and gravel to the elevator on the bank for loading into cars. The elevator at Profit Island is equipped with a Hoover & Mason hoist and belt conveyor, planned by their consulting engineers, Brenneke & Fay, St. Louis, Mo. The bucket

last sand and gravel to the Texas and Pacific railroad. He also has a small contract for 200,000 yards of sand and gravel for the Frisco road and ships commercial gravel as far west as Houston, Beaumont and Port Arthur, Tex., covering all the towns in southwestern Louisiana. Profit Island is twenty miles from Baton Rouge in the Mississippi river, from which point he furnishes vast quantities of this material every year. He commenced operations in this city four years ago and has become one of the heaviest producers of sand and gravel in the south. The plant at Profit Island is in charge of K. S. Baysinger and the New Orleans office is in charge of R. A. Thompson.

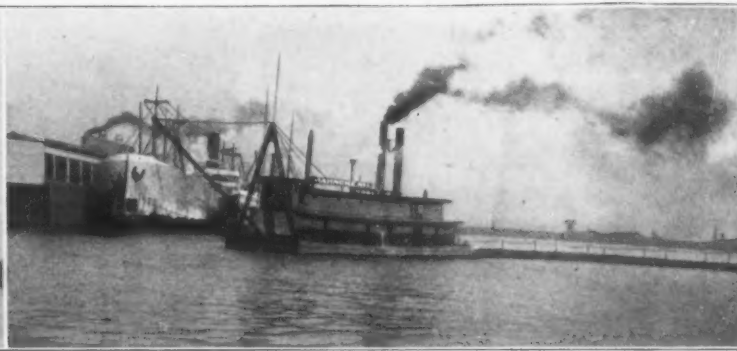
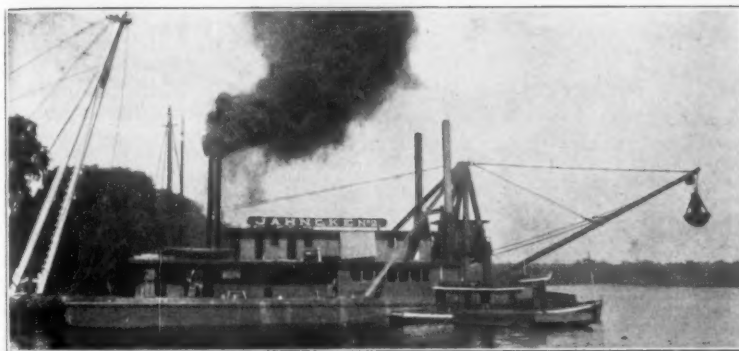
The Orleans Gravel & Sand Company, with offices in the Weis building, was established here six years ago. It operates six yards where sand, gravel and shells are stored. Each yard is along the new and old basin canals. It owns a fleet, consisting of one tugboat, one hydraulic dredge and four barges. The dredge is used for loading barges with sand, gravel and shells. It gets its material out of the Tchefunctia river, Lake Pontchartrain and Pearl river. Most of this material is used in the city and only about 10 per cent is shipped to points outside of New Orleans. James Denton, its resident manager, reported business last year quiet but fair, and so far not much improvement has been found this year. Prices are the lowest they have been in the history of New Orleans.

The Louisiana Gravel & Sand Co., with offices at 339 Carondelet street, was established three years ago. It operates two suction dredges equipped with eight and ten-inch pumps, and owns sand and gravel pits at Hattiesburg, Miss. All sand and gravel from this point is used for concreting purposes of every description. The company ships this material to New Orleans, Jackson and Gulfport, Miss., and other tributary towns, including Mobile, Ala. Charles Mendelson, secretary of the company, stated that business in 1911 was not as good as the year previous, owing to the fact that there was not as much paving done in New Orleans last year. This year's business opens up fairly well. Sand and gravel reached the lowest price here in many years.



WALTER JAHNEKE, KING OF THE CARNIVAL AT NEW ORLEANS. Courtesy of "The Lehigh."





CLAM SHELL DREDGE DOING GOVERNMENT WORK IN LOUISIANA DISTRICT. HYDRAULIC DREDGE AT FAMOUS STUYVESANT DOCKS, ILLINOIS CENTRAL TERMINAL.

#### LOUISVILLE SAND NEWS.

Louisville, Ky., April 20.—The Ohio River Sand Company has reported excellent present business, supplemented with a fine outlook for the remainder of the summer.

Notable development of the interests of the Ohio River Sand Company is now being planned. Under the guidance of Charles H. Bohmer, president of the company, plans are now under way for the establishment of a sand yard for the concern in South Louisville providing direct transportation facilities with the division of the Louisville & Nashville Railroad, extending through that part of the city. The exact location of the South Louisville yard has not yet been decided, according to Mr. Bohmer, but arrangements are now being completed and material improvement of the company's facilities for handling the sand business will be afforded.

The E. T. Slider Company has over-hauled its electrically-equipped plant, one of the finest in Kentucky, and is preparing for a busy season with unusually good prospects. P. C. Donaldson, of the E. T. Slider Company, has returned from an enjoyable trip through Florida and Cuba, spending several weeks in the tropical clime. Mr. Donaldson viewed the interesting spectacle of the burial of the sturdy old battleship "Maine" four miles off the coast of Cuba, when the nation paid its respects to the battered hulk as it plunged to its final resting place.

The Nugent Sand Company is handling the sand supply to the Inter-Southern Life Insurance Company's 18-story office building at the corner of Fifth avenue and Jefferson street, Louisville's tallest skyscraper.

The members of the Nugent Sand Company are working up plans for extensive improvement of the company's properties in Louisville. A new sand company of the most approved type is to be erected, affording facilities for loading direct to wagons, and a steam derrick and dredge with a capacity of 1,000 yards of sand per day is to be installed. The derrick has been purchased from the Naulke-Richards Company, of Indianapolis, Ind. The company expects to have its enlargements complete in early summer.

The Home Construction Company, of Lexington, Ky., has filed a complaint with the State Railroad Commission at Frankfort against the Louisville & Nashville Railroad Company. The construction concern asks that the railroad be compelled to equalize its rate upon crushed rock and sand from the Home quarries a short distance out of Lexington so that the charge shall be equal to that charged the city of Lexington from its quarry. The Railroad Commission has taken the case under advisement and an opinion as to the Lexington quarry rates will be forthcoming in the near future.

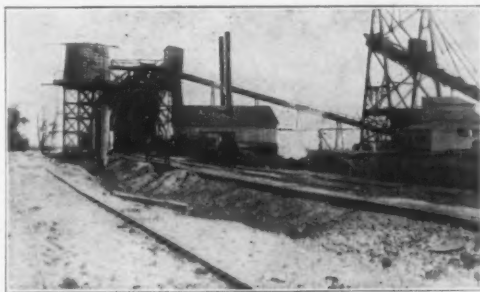
The Kentucky River Stone & Sand Company, of Lexington, Ky., has secured the right to develop a valuable tract of blue limestone quarries on the Kentucky river near Tyrone and is pushing this work along at the rate of 500 yards of stone per day, Manager T. B. Ripy having established branch headquarters near Tyrone.

Articles of incorporation were recently granted the Hotchkiss Sand and Gravel Company, Chicago, Ill., which will deal in sand and gravel and other building materials. Incorporators: Everett S., William S. and Lawrence E. Hotchkiss. The company will begin operations with a capital stock of \$10,000.

Frneka-Kickler Gravel Company, of Columbus, Texas, has filed an amendment changing its name to Columbus Gravel Company, and increasing its capital stock from \$16,000 to \$50,000.

The Reynolds White Sand Company and the Reynolds Silix Company, of Bristol, Tenn., joint corporations which will establish a \$100,000 industry for the production and sale of white sand such as is used in glass manufacture, have been organized in Bristol by R. S. Reynolds, one of the best-known business men in Tennessee and North Carolina. Mr. Reynolds has resigned his position as vice-president of the R. J. Reynolds Tobacco Company, of Winston-Salem, N. C., manufacturers of the famous "Prince Albert" and other brands of smoking and chewing tobacco, to engage in the sand enterprise. He is a former resident of Bristol and has returned to his native city to establish the new projects after having been identified with the Winston-Salem tobacco interests for several years.

The Montezuma Sand, Gravel and Timber Company, of Springfield, Ill., began operations the middle of April at its gravel pit at Montezuma, Ind. This new concern, which was recently incorporated with a capital stock of \$10,000, promises to be a factor in the supply business, reaching out at first for roadway gravel and concrete gravel orders as



GRAVEL ELEVATOR OF J. W. THOMPSON AT PROFIT ISLAND.

a specialty. The pit is located on both the Cincinnati, Hamilton & Dayton and the Chicago & Eastern Illinois railroads, giving ample shipping facilities. It is probable that later on some time will be devoted to the sand business. A. F. Hemphill, one of the incorporators and formerly with the Virginia Timber Company and experienced in the sand and gravel line, will be in charge of the general offices, 507 Myers building, Springfield, Ill.

It is reported that the Port Moody Sand & Gravel Co., of Port Moody, British Columbia, will establish a rock quarry, sand and gravel bunkers, wharves, crushers, pumping plant to obtain sand from the bay, etc., at that place, to be operated by electric power supplied by the Western Canada Power Co., of Vancouver.—[Consular Report.]

The Summit Silica Co., Barberton, Ohio, has been organized, to mine silica sand. The capital stock is \$50,000 and the organizers are J. Edward Ruch, E. E. Otis, E. P. Otis, L. E. Barnes and M. R. Kinney.



TUG WALTER F. JAHNCKE AND TOW OF SEVEN BARGES OF GRAVEL GOING DOWN THE MISSISSIPPI.

#### NEW YORK SAND AND GRAVEL NEWS.

New York, N. Y., April 16.—The spring demand for sand and gravel has been coming along rather slowly during the past month. Up to the present writing the contractors have only started preliminary work. Dealers report, however, that they have received numerous inquiries for sand and gravel, and that within the next month they expect to be kept busy filling orders. The outlook for business conditions at the present time are very bright, and a big improvement is expected over the same period of last year. Prices continue to be steady and sand is now quoted at 45 cents per cubic yard, and gravel 85 cents to 90 cents per cubic yard alongside dock. Dealers are optimistic and predict a good run of business during the spring season.

Charles A. Fox, manager of the Phoenix Sand and Gravel Company, remarked: "The demand for sand and gravel during the past month assumed fair proportions for as yet only preliminary work has been started on big contracts in this vicinity. A large number of inquiries have been received during the past fortnight and they as a rule are the forerunners of a brisk demand. The outlook at the present time for a good summer demand is very promising as we expect during the summer months that the subways will then be ready to use sand and gravel in large quantities."

Joseph N. Ely, of the Crescent Sand & Gravel Company, in speaking of the conditions in the local sand and gravel market, said: "The large number of orders that came to hand at the opening of the season have moderated somewhat during the past month, but on the whole the demand for sand and gravel continued to be steady. The business that was transacted during the month of March showed a big improvement over the same period during last year. The outlook is very bright and during the course of the next month or so we expect to be kept busy delivering our product. Prices remain unchanged and continue to rule steady."

A representative of the Goodwin Sand & Gravel Company reviewed the conditions in the sand and gravel market during the past month as follows: "Business in the sand and gravel trade during the past month was fairly good. From the number of inquiries we received last week we expect that the demand will greatly improve during the next month. The prospects for a good season are bright and promising and indications point to that direction. Prices are firm and remain unchanged."

The Mackinaw Sand and Gravel Company, of Lincoln, Ill., has completed its new plant at Mackinaw, the only one in central Illinois equipped with revolving screens and gravel crusher. A two-yard cableway excavating bucket and storage bins with a capacity of twenty-five cars make it a credit to the sand and gravel industry of the state. The plans and specifications were drawn by Raymond W. Dull & Co., of Aurora, Ill., and the work was done under the supervision of that firm.

# Concrete

## National Association of Cement Users

Meets Annually.

### OFFICERS

Richard L. Humphrey, Philadelphia.....President  
E. D. Boyer, Catsagaua, Pa.....1st Vice-President  
Arthur N. Talbot, Champaign.....2nd Vice-President  
E. S. Larned, Boston, Mass.....3rd Vice-President  
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W. H. Ham, Boston, Mass.—Insurance.  
A. E. Lindau, St. Louis, Mo.—Reinforced Concrete Building By-Laws.  
C. W. Boynton, Chicago—Roadway, Sidewalks and Floors.  
L. C. Wason, Boston—Treatment of Concrete Surfaces.  
R. P. Miller, New York—Fire-proofing.  
Robert A. Cummings, Pittsburgh, Pa.—Measuring Concrete.  
Peter Gillespie, Toronto, Canada—Nomenclature.  
Sanford E. Thompson, Newton Highlands, Mass.—Specifications and Methods of Tests for Concrete Materials.  
Logan Waller Page, Washington D. C.—Education.

### ENDORSE CONCRETE CONSTRUCTION.

At the March meeting of the structural section of the Engineers' Society of western Pennsylvania, held in the Oliver building, Pittsburgh, Pa., John A. Ferguson, assistant engineer of the bureau of construction in Pittsburgh, read a splendid paper on "Concrete Construction in Bridge Building." He said that Pittsburgh has eighty-nine bridges, of which seventy-one are steel, seven are wood, five are stone and masonry and six are reinforced concrete. The wood and steel bridges, he says, usually reach the end of their usefulness by the time the bonds issued for their erection have been paid off. While the first cost of the concrete is from 10 to 25 per cent higher than steel, he believes that it is in many ways preferable. Robert A. Cummings also advocated the use of concrete in bridge construction because of the permanency of the structure and the graceful lines which could be secured.

H. E. Piper, of Marengo, Ill., has purchased a machine for making cement brick which will be installed in a block and tile factory.

The Cement Stave Silo Company has opened an office at 19 River street, Elgin, Ill., in charge of T. A. Patterson, and the cement stave for silos, cisterns, tanks and other receptacles will be exploited.

K. T. and Edward Nelson, of Jerseyville, Ill., have purchased a site in that city near the Chicago, Peoria & St. Louis railway lines, and will erect a modern plant for the manufacture of cement blocks and tile.

The Vaughan Fireproof Products Company, of Cleveland, Ohio, has been incorporated with capital stock of \$10,000, to deal in fireproof materials, reinforced concrete floors and ceiling beams. The incorporators are Benjamin A. Gage, R. A. Wilbur, M. H. Coyne, A. S. Dole and C. C. Wise.

The Schaefer Manufacturing Company, of Berlin, Wis., has placed its new "Direct Connected" cement mixer on the market. The engine is connected directly to the pinion that drives the drum, all intermediate gears are eliminated and it is claimed that 40 to 60 per cent of power is thus saved.

The Crawford Construction Company, of Pittsburgh, Pa., has the contract for the concrete piling which will form the foundation of the \$100,000 warehouse to be erected at Seventh street and Duquesne way by William F. Trimble & Sons Company for the George A. Kelly Company, wholesale druggists.

The Bruning Lumber Company, of Havana, Ill., has wrecked its cement block factory on North Pear street and commenced operations at its sand pit, which is convenient to both the Illinois river and the Illinois Central railroad tracks. A new building 30 x 120 has been erected here for the manufacture of cement products, specializing in cement silos. Machinery for hoisting the sand also has been installed.

King & Ystrom, cement contractors, Champaign, Ill., are starting upon their ninth successful season.

The Herrick Concrete Mold Company, of Carlinville, Ill., has changed its name to the Herrick Construction Company.

J. A. Young, city forester of Aurora, Ill., reports that in the last year more than 500 trees in that city have been doctored with cement.

Iven Hoyt, cement contractor at Watseka, Ill., has completed for himself a rock-faced cement block house to be used for renting purposes.

H. K. McClintock has started a concrete factory in Wright's lumber yard at Mt. Carmel, Ill., and will make blocks, columns and other products.

The Illinois Valley Cement Products Company, of Farmington, Ill., has installed a new motor. This firm is doing considerable concrete silo work.

Chester Silfies, in the concrete business at Martinton, Ill., for the last two years, has gone to Chambersburg, Pa., to manage a large cement block and tile factory.

B. L. Jones, of Chicago, has accepted a position with the Chester A. Harris Company, of Champaign, Ill., having charge of the construction of reinforced concrete silos.

The Balfour-Guthrie Cement Company, of Bellingham, Wash., has concluded an arrangement with the Wheaton County Railway & Light Company for power to operate the plant.

The Northwestern Tile Company has been awarded the contract for the terrazzo work on the addition now being erected to the Milwaukee museum at the contract price of \$3,000.

A. C. Lyman has moved his cement block factory in Watseka, Ill., to North Third street, where he will continue the manufacture of cement blocks, fence and hitching posts and porch columns.

The firm of J. A. Ross & Co., of Chicago, has been incorporated with capital stock of \$33,000, to manufacture cement and concrete products. The incorporators are H. Vander Ploog, Henry Bierra and Elmer N. Schmick.

The Specialty Concrete Company, of Chicago, has been incorporated with capital stock of \$325,000 to manufacture concrete products. The incorporators are William H. Hatch, Frederick Allwardt and James R. Patterson.

The Illinois Concrete Products Company, of Joliet, Ill., has been incorporated with a capital stock of \$25,000, to manufacture and sell concrete products. The incorporators are John T. White, Morrill Sprague and James W. Martin.

Lott Everett Lawson, 46 years old, a member of the cement contracting firm of Taintor & Lawson, Springfield, Ill., died April 8 at his home in that city. He had been a leading business man of Springfield for twenty years.

T. W. Black is seeking a factory site at Oshkosh, Wis., to take up the manufacture of terrazzo, a combination of marble chips and cement. Practically all the stock necessary to complete the deal has been sold in Oshkosh and nearby points.

The Stainfield & Nichols Concrete Company, of Joliet, Ill., has taken over the burial vault, building material and ornamental business of the Mateer Brothers Company in that city. The Mateer company retains the bridge building business and will enlarge in that field. George H. Stainfield, of the new firm, was superintendent for the Mateer firm since its concrete department was established. His associate is J. Gordon Nichols, of Yorkville.

The Universal Portland Cement Co., Chicago, is offering \$1 apiece for photographs 4x5 inches or under and the same for letters of 250 words or less, which illustrate or tell of good concrete work on the farm. They reserve the right to judge of the suitability of any letter or photo. This is to obtain good, live material for their publication, "Farm Cement News," which is sent to over 300,000 farmers throughout the country. Unlike many house organs, it covers but one subject—the uses of concrete on the farm. It is not technical, but is planned only to show the experiences of successful farmers throughout the country.

## TWO SHOWS

### The Cement Products Exhibition Company Recommends Holding Two Shows Next Year, One in New York and One in Chicago.

The Cement Products Exhibition Company are sending out this week a letter to all exhibitors inviting a free and open discussion on matters pertaining to the management of the exhibitions. The letter is signed by J. P. Beck, the general manager and excerpts are given herewith:

For the season of 1913 we propose the holding of Cement Shows at New York and Chicago. The date of the New York Show will be during the latter part of January or early in February, and for the Chicago Show the latter part of February.

During the 1912 Cement Shows, as heretofore, the question of placing the machinery in operation in one portion of the exhibition hall was raised. We have been unable to find a satisfactory solution of this problem.

It has been definitely decided that during 1913 Cement Shows will be held at New York and Chicago. Recently the question of an additional exhibition has come up and many of our exhibitors, and other interests, have suggested different points for the third Cement Show of 1913. Some suggested Atlanta, some New Orleans, in the southern territory, and others Minneapolis in the Northwest. Since the construction of the new Grand Central Palace in New York and the reported destruction of Madison Square Garden, the question of the advisability of holding the Cement Show in the Palace instead of the Garden has been raised. If we are offered a lease on Madison Square Garden, it is our intention to hold the next New York Cement Show there. At Chicago, a change to the International Amphitheatre at the Union Stock Yards is under consideration. The only doubtful element in this proposed plan is in the matter of attendance. It is thought that from all other standpoints the Stock Yards Amphitheatre offers advantages over the Coliseum, particularly in the matter of general expense to the exhibitors.

For the next year's Cement Shows we would like to improve on the style of fixtures; that is, partitions, railings, lighting effect, etc. Some exhibitors favor a low railing at the back of booths instead of the high partition. In many respects the open effect secured by low partitions is preferable to the use of high partitions. We will be pleased to have an expression of opinion on this matter.

### CONCRETE SILOS.

The interest in silos and silo building has tremendously increased in the last year. A comprehensive discussor and book of designs on silos was published by the Universal Portland Cement Co. in their "Concrete Silos," which is now passing through its fourth edition of 20,000 copies.

The farm press and agricultural colleges both give a large amount of attention to silos and are using this publication of the Universal Portland Cement Co. as a source of material and text book. The demand for concrete construction for silos as well as troughs and tanks for farm use has been greater than could be cared for by the local contractors in many districts, and it is probable that a profitable field for construction work can be found in silo building.

### "HE KNEW HOW."

John Rivers, auditor of the L. P. Dolliff Lumber Co., of Minneapolis, overheard a farmer talking with a wood silo salesman. After the salesman had talked at some length, the farmer asked whether he would be able to put up this wooden silo himself. A farmer standing near said, "Sure you would; I have put mine up eight times in the last three years." This conversation occurred at Morton, Minn., but this trouble with wood silos is happening everywhere. There is only one silo which does not require tightening up of the bands, which does not require insurance, and that is the concrete silo.

At a convention of the Iowa Ice Dealers' Association at Waterloo, Iowa, during March a committee was appointed to investigate and report at the next meeting on the use of concrete for the permanent construction of ice houses. This committee is to work in conjunction with the information bureau of the Universal Portland Cement Co., and the report is to be published at their expense for wide distribution.

This co-operation, by bringing together practical ice men and trained concrete engineers, should result in a standardization of ice house construction materials.

A new sixteen-page illustrated publication is being issued by the Universal Portland Cement Co. "Permanent Pavement." It covers the field of good roads, and while the company is now especially interested in pavements using concrete it will cover all types. It is to arouse interest in road improvement and in bettering farming conditions through better transportation facilities.

E. E. Brass and his associates in the Virginia Canning Company at Petersburg, Ill., will engage in the manufacture of concrete blocks, fence posts and tile in connection with the cannery.



## HIGHWAY COMMISSION

Of the State of Illinois Has Given the Weight of Its Influence to the Concrete Bridge and Is Doing a Great Work.

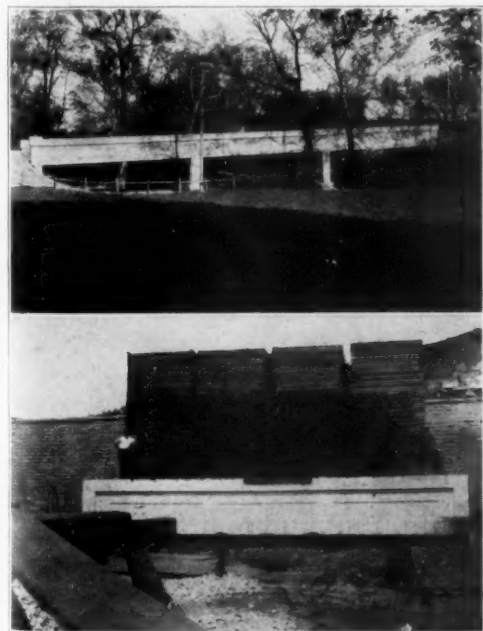
The introduction to a recent bulletin on modern bridges, by the Illinois State Highway Commission at Springfield, Ill., set forth the purpose of the commission to secure better roads for the state. "Better roads" means "the best." Then the commission went ahead in its report discussing only concrete bridges, thus placing the stamp of superiority on this structural material for bridges.

In 1911 this branch of the state government was responsible for the construction of 166 concrete bridges and 37 steel bridges with concrete foundations and floors—a total of 203. The approximate aggregate cost was \$350,000, an average of not less than \$1,500 and not more than \$2,000. The rapid adoption of concrete for bridge work is shown in the summary of plans furnished for preceding years:

	1906	1907	1908	1909	1910
Concrete .....	2	32	46	57	91
Steel .....	0	7	13	19	16

The State Highway Commission prepares plans and estimates and supervises bridge construction for county, municipal and township officials without charge. A formal request must be made—the department is not a meddler. When assistance is asked the commission investigates the site of the proposed bridge, makes an inspection where necessary and suggests the size and kind of bridge best adapted. At the same time a fairly close estimate of the cost can be made. If the city, township or county decides to go ahead the commission will prepare detailed plans and specifications, send information to a hundred or more bridge companies, attend the letting and advise whether the bids are within a reasonable cost. Before the contractor is paid the bridge will be inspected by an expert and the township or county advised whether the work is properly done—in short, if it is a structure that will be permanent with no upkeep. Civic officials in Illinois take kindly to the matter-of-fact way in which business is done and have all confidence in the commission.

While the greatest work has been done for small bridges for highway commissioners, several larger structures have been designed which mark progress in Illinois bridge construction, and others are yet to be consummated. The Illinois river bridge at Ottawa is 930 feet long and cost \$90,000; three artistic arches play a prominent part in the \$30,500 concrete structure over the Fox at Batavia; plans are being drawn for an 850-foot concrete viaduct at Danville and for a large steel bridge with bascule spans across the Illinois at Lacon. One of the most notable projects probably will be witnessed at Aurora, where three spans on each side of an island in the Fox river will make a 650-foot bridge and add to the picturesqueness of that city. This will call for an outlay of \$100,000 but will be an achievement in Illinois municipal bridge-building.



NORTH WALNUT STREET BRIDGE, SPRINGFIELD, ILL. 3-45 FT. SPANS, ROADWAY 20 FT.  
MENARD TEST BRIDGE.



A. N. JOHNSON, ENGINEER, ILLINOIS STATE HIGHWAY COMMISSION.

In referring to the designing and supervision of smaller bridges, Engineer A. N. Johnson said:

"In our work we have found this to be true that in many instances a multiple concrete span is being used instead of steel spans as before. The multiple



SMITH BRIDGE SHOWING CONCRETE FLOOR BEFORE MACADAM HAS BEEN PLACED. SPAN 120 FT., ROADWAY 16 FT.

concrete span seldom exceeds the cost of the steel span by more than 15 per cent, and in many instances the multiple concrete spans have actually proved to be cheaper. Owing to the manifest advantages of an all-concrete bridge—durability and appearance—many counties are deciding, even at an increased cost, to put in multiple concrete spans. The tendency is to substitute concrete for steel."

The through girder concrete bridge has been given preference over the arch type in a good many locations for several reasons. Generally, it has proved most economical. Foundations usually must rest upon earth and a bridge supported by two girders to which the floor is hung gives a maximum waterway for a given distance between abutments. Up to spans 40 to 60 feet where the roadway is not required to be over 18 or 20 feet, this type of bridge has proved economical compared with arches having the same area of waterway and designed to carry the same loads. The top of the girder bridge is heavier than required for arches yet there is no horizontal thrust and the abutments do not need to be as extended or as heavy. The girder is massive and well adapted to its apparent purpose and has been declared not displeasing in general outline. Uneven settlements of abutments due to soil conditions are of slight consequence to girder bridges, but threaten the stability of the arched type.

Inspectors from Mr. Johnson's office have made many reports which are valuable to concrete contractors. Often the contractor lost money; incompetency of a foreman is the most usual cause. The foundation work was carelessly handled and after cave-ins a large amount of extra material would be shoveled from the bottom of the trench to the top. Some contracts were let 30 to 40 per cent below the estimate. The commission believes there should be some manner of rejecting a manifestly too low bid. It is unfair to the reasonable bidder, unfair to take advantage of the contractor making

the low bid and unfair to the taxpayer by putting a premium on poor work.

Specifications for the various classes of concrete masonry are included in reports by the commission and will be valuable to contractors who plan to seek contracts. Generally speaking, it has been found there is little profit in doing this class of work for less than \$10 or \$12 a cubic yard.

The Highway Commission is doing more than furnishing plans and supervising bridge-building. Engineer Johnson and his assistants are going into the farmer's institute meetings which are now held two and three to each county, and talking for good roads and good bridges—which means concrete bridges.

## A NOVEL METHOD OF POURING CONCRETE BRIDGE FLOORS.

In the construction of the main viaduct of the McAdoo tunnel extension into Newark a very interesting method was used in pouring concrete bridge floors which are trough shaped and each 13' wide, 11½' thick, and laid in sections 250 ft. long with expansion joints between.

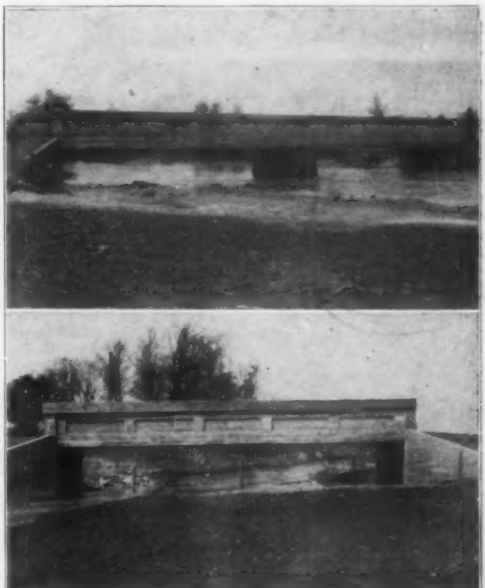
The forms are built complete several hundred feet in advance of the concrete and the reinforcing steel is set and tied by the force of the steel contractor before a run of concrete is started. Concrete is then placed by two traveling plants on the deck of the viaduct. One consists of a 7-ft. gauge car carrying a 1-yd. Ransome mixer and timber feeding bins.

It runs on the temporary track mentioned at one side of the slab which is being placed. This track has three rails to accommodate standard-gauge and the 7-ft. gauge. A locomotive crane on the track accompanies the traveling plant and supplies its bins from material cars standing on one of the outer freight tracks below. Concrete is delivered from the mixer to any part of the slab on the opposite half of the viaduct by a sectional chute, and is tamped in place by the concrete gang. Under this plan of operation 250 ft. of single track slab is placed in an 8-hour day and at times two sections, or 500 ft., have been laid, the time required being 14 hours. On a large part of the work, in placing the second track-slab, a second Ransome mixing plant has been installed, consisting of a mixer on a flat car, with the material cars coupled at the ends. This traveling plant moves over the completed first track and operates similarly to the other described.

There is every indication that this method of pouring bridge floors is thoroughly economical and efficient and these two traveling mixing plants are well worth the study of contractors anticipating this kind of work.

The buildings and machinery of the former plant of the Ford City Brick Company, Ford City, Pa., have been purchased by A. M. Mateer of that place.

The South Belmont Construction Company, of Newark, N. J., has been incorporated to carry on a general construction business. Capital stock \$100,000. The incorporators are A. Levy, S. Levy and G. Brown, Jr., all of Newark, N. J.



P. O. JOHNS BRIDGE, 2-60 FT. SPANS, ROADWAY, 16 FT.  
MUD CREEK BRIDGE, SPAN 60 FT., ROADWAY, 16 FT.

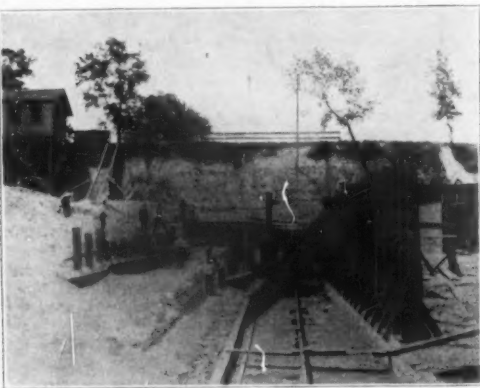
# OHIO RIVER IMPROVEMENT

Upward of Sixty-four Million Dollars Being Spent by the Government Improving This Already Most Important Traffic Bearing Stream in the World.

Largely because of the immensity of the work on the Panama Canal the importance of similar concrete construction projects nearer home has been lost sight of. Yet the canalization of the Ohio river from Pittsburgh to Cairo, which began about 1900 and is to be completed in 1922, is a work which in the extent of the construction involved, in the engineering difficulties overcome and in the consumption of cement is probably without parallel in the United States.

It is certain that no other river canalization work of this extent has ever before been under way in the entire world. The Mississippi river improvement plans involve the handling of a larger stream, but it is kept open only by dredging, building levees, etc., while the plan for the im-

provement of the Ohio is one requiring the construction of locks and dams and the erection of immense wall structures, practically all of them of massive concrete.



UPPER GATE RECESS AT LOCK NO. 2.

provement of the Ohio is one requiring the construction of locks and dams and the erection of immense wall structures, practically all of them of massive concrete.

The project is for the purpose of giving a minimum stage of nine feet in the Ohio for the entire year. Before the project, which, incidentally, is the only one which has been approved in toto by the War Department and Congress, and which is now being carried forward in a definite and systematic way, was finally O. K.'d by the powers that be, a long period was taken up in the survey of the river and the determination of the cost of the work and the resulting advantages to business.

The report, which was published in 1905, proved all that had been claimed for the improvement work. It developed that the plan which was found best involved the canalization of the river for its entire length, and the construction of locks and dams at intervals along the river, the purpose being the creation of independent pools which would be maintained at the minimum level and would thus make it possible to operate boats at all seasons of the year.

Fifty-four locks and dams were called for by the report and it was adopted and made the basis for the work, which is to be carried forward steadily until the project is completed. The entire cost of the work, including that which has already been done, will total \$64,000,000, and it is expected that

1922 will see the completion of the gigantic undertaking, which has been under the supervision of the Engineering Corps of the War Department from its inception.

The importance of the work from a public standpoint has never been fully appreciated. The possibilities of the stream will be realized, however, when it is stated that the Ohio is already the greatest traffic-bearing river in the world, and that the volume of freight handled on it even now is larger than on any other stream on earth. When it is possible to ship goods at all seasons of the year, both in summer, when ordinarily the water falls to such a level that steamers are not able to run, and in the fall and winter, when the stage is naturally sufficiently high to provide navigation facilities, the volume of traffic which will be handled will be almost beyond estimation.

The construction of the Panama Canal also is suggestive in this connection. It is within the range of possibilities that a cargo of steel, put on board a steamer at Pittsburgh, will be delivered later at San Francisco, the entire trip having been made by water. While it is not likely that sea going craft will ever be used regularly in the river traffic, it is obvious that by reloading at New Orleans it will be easy to provide an all-water route from Pittsburgh to San Francisco, involving the use of the Ohio and Mississippi rivers.

The first of the locks and dams built according to plans for the entire project was at Pittsburgh. Altogether six have been erected in that district. One has just been completed above Cincinnati, O., and a contract has been let and work begun for similar work at Louisville. Another has been provided for at Henderson, Ky. At Louisville, owing to the falls of the Ohio occurring there, the river has been locked for three-quarters of a century, but this was without relation to the general project. The new work will enlarge the capacity of the locks to a great extent, the work being carried on, incidentally, without interfering with traffic in the slightest degree.

Of the fifty-four locks contemplated in the project,



BROWN HOIST LOCOMOTIVE CRANE ON LOCK NO. 7.

ect, twenty-nine have been entered into. Eleven have been finally completed and the remaining eighteen have been contracted for or authorized. The other twenty-five will be taken up as appropriations permit, but the work will be rushed so that 1922, as indicated, will see the completion of the project, and the nine-foot stage, which has been a slogan of the river improvement advocates for

years, will be a realized fact instead of a battle cry.

Of the locks thus far erected all but one, the original work at Pittsburgh, have been built of concrete. The first was erected of stone, concrete construction at that time not having been developed to a large extent. The principal consideration which has determined the use of cement has been that of cost, after the fact had been demonstrated that concrete construction could not be improved upon. The relative cost of stone of equal grade is so much greater as to make comparison, with a view to substituting the former material out of the question. The cost of erecting the walls of the locks at Louisville, for example, is \$5 a cubic yard. Stone would cost easily \$15. Inasmuch as the units needed to complete the project have involved the use of figures running above \$1,000,000, this immediately put concrete forward as the only practicable material.

The importance of the work from a cement standpoint can hardly be too greatly emphasized. It is estimated that including the work contracted for and that which remains to be done the consumption of cement will amount to between 3,000,000 and 3,500,000 barrels. This result is arrived at by considering the amount of cement used at



VALVES IN RIVER WALL LOCK NO. 2.

Louisville, which is about a typical case. Sixty-five thousand cubic yards of concrete are to be poured, and the mixture will be in the proportions of 1:3:6. This will require 71,500 barrels of cement.

Eleven of the locks and dams have been built, leaving forty-three still to be constructed. Figuring the consumption of material for these on the same basis as that called for in the Louisville job, the result is 3,074,500 barrels. As there is a lot of supplementary work of one kind and another to be done, it is believed that before the work has been finished fully 3,500,000 barrels of cement will have gone into the work.

As stated above, the job is one requiring the use of massive concrete, the reinforcing being of comparatively little importance.

Twisted bars are specified at critical places where there are openings in the walls, and a good deal of steel also goes into the foundations for the power houses which are erected on the walls of the locks for the purpose of operating the gates; but in general the proposition is one calling for solid concrete without reinforcement.

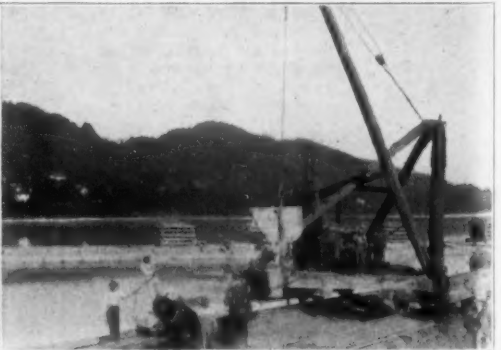
The principal difficulties are those having to do with the excavations for the walls of the locks, and the erection and bracing of forms for the walls. As a rule the walls are erected on solid rock, and it is often necessary to blast this out to the depth of twenty or thirty feet, the concrete wall above usually being a continuation of the



WORK AT LOCK NO. 4, LEGIONVILLE.



LAND WALL AT LOCK NO. 4.



UPPER GUIDE WALL TO LOCK NO. 2.



natural wall cut out below. Now and then it is necessary to cut down the rock base while it is covered with water, the rock being dredged out after blasting. This is much more expensive than handling it in the dry, however, so that blasting and excavation generally are carried on at low water stages whenever possible.

At Louisville, owing to the fact that there are already locking facilities which were built several years ago, superseding the original work done about 1838 for the purpose of enabling boats to avoid the falls, the new lock will be built immediately south of the present one, lying close by it. It will, therefore, not be interfered with to any marked extent by high water, and much more favorable working conditions will be enjoyed than at other points, where there is no such work ahead of the contractor and where he has to handle the job with all of the handicaps provided for by varying stages of water, all of which must be taken care of.

Where a rock foundation is to be had the walls of the lock and its gates are built under ideal conditions. Otherwise piles have to be driven, and getting the right kind of foundation has given the engineers something to think about. The piles, which are below low-water level, are of wood, for although reinforced concrete piles have been suggested, there has never been a definite determination of the action of water on steel, and it has not been desired to take any risk in connection with the work. Those interested in reinforced concrete work could do the industry a service by making tests in this direction and determining what, if any, the deterioration of steel reinforcing under water is.

The erection of forms and the bracing of the forms for the walls of the locks involve the heaviest part of the expense of the work; in fact, contractors have stated that it costs as much to put up the forms as it does to put the concrete in place, including in the latter estimate the cost of the material. This is on account of the immense size of the work. Taking the Louisville lock again as a typical example, it is fifty feet high and ranges in width from thirty-two and one-half feet at the base to twenty feet on top. Putting up and bracing forms which will properly hold such immense masses of concrete is a proposition requiring the best ability that the contractor can develop and the problem has not yet been worked out to its ultimate solution.

Wooden forms have been used to a large extent heretofore, but it is generally understood that steel forms, with steel braces especially fabricated for the work, will be substituted. These forms, it is stated, will be movable, and the concrete will be poured constantly, the forms being lifted from above by a yoke connected with both the forms and the concrete proper. The adjustment of the power required for handling these forms will be another delicate problem.

Ordinarily the concrete may be mixed sufficiently close to these jobs to enable it to be derricked directly into the forms. Where conditions are not so favorable other methods of conveying the material have been resorted to, and the widely varying conditions of work have evolved a number of unusual methods of depositing the concrete.

A good many contractors who have had charge of jobs on the Ohio river project have failed after a vain attempt to solve the numerous involved and difficult problems with which the man on the job has had to contend; but it is stated that in hardly any case would the failure have resulted if the problem of delivering the concrete from the mixer to the point of use had been satisfactorily worked out. The expense involved in inefficient methods of handling proved the weight which most of those who failed were unable to carry. This merely emphasizes the need of the best equipment and the most modern methods of handling in order to take care of a job of this magnitude successfully.

The lock at Louisville will be 110 feet wide and 600 feet long, compared with the present capacity of 214x80 feet. It is known as Lock No. 41, and it is estimated that the excavation of the foundations and the erection of the masonry will require from three to four years. The contract price for this work, exclusive of the gates and equipment for their operation, is \$1,030,000. The Ohio River Contract Co. is doing the work.

The Shope Concrete Block Company, of Portland, Ore., is figuring on starting a plant at Centralia, Wash.

The Pacific Concrete Products Company has been incorporated at Los Angeles, with a capital stock of \$100,000, by C. W. Flanders, F. E. Streuli, H. H. Ruhe, W. M. Thompson and E. C. King.

## ROADMAKING.

### Portland Cement in Such Work and Problems to be Met as Exemplified in Roman Roads.

"Nothing has so turned the attention of the people everywhere to improved roads for country travel as the automobile. Primarily built for pleasure at an extravagant cost, this vehicle seems to be the influence making toward a lasting public benefit. It has been the forerunner of the commercial motor wagon, a recognized economy and convenience for every one of the important traffic on road or street, and if in addition the rural regions are to proceed in the construction of permanent highways, both pleasure and profit will be general, instead of occasional as now. This question is of so much importance that the Agricultural Department of government maintains a special branch for the study and development of it; that is, the proper material for the building of country roads, taking into account all factors, such as first cost, time elapsing before renewals are necessary, climatic effects, freedom from dust, and other phases. To learn much of the matter we must probably follow Logan Waller Page of the Good Roads Bureau in Washington back to his report on the Applan Way, built 312 years B. C. and the best type of road built by the Romans. We will in that way learn that lime-cement concrete is the oldest road material of which any records exist. While part of this Roman highway is in a good state of preservation today, we have demonstrated the fact that Portland cements are far superior in strength and durability, to the lime mortar used by the Romans. Mr. Page in his investigation, however, has so far seen no road built of Portland cement concrete that he could unqualifiedly pronounce a success. The difficulties seem to be two characteristics to be met: One is the tendency of concrete where exposed as in road surfaces, to develop shrinkage cracks. These, too, are generally parallel with the road and increase as time goes on. The other is the ease with which concrete spalls along the margin of the cracks. It has not been accepted as a fact that concrete roads fall through expansion, though the general practice is to place expansion joints at right angles to the line of concrete roads, at frequent intervals and at these joints the spalling is most noticeable. Much investigation seems to confirm the belief that there is no better form of road construction at so low a cost to meet automobile traffic conditions, than a cement macadam road. The most desirable types of rock, if used—and they could be—would give maximum life to the road and it would be practically dustless. Apparent as is this truth and notwithstanding the ingenuity and refinement resorted to in the endeavor to use Portland cement, except in a few isolated cases success has not been attained.

If the question is asked, Why have the Roman roads stood varying traffic conditions for so many centuries? Mr. Page expresses the opinion that a consideration of it might be helpful in meeting our present conditions. As of immediate value he shows that in the construction of Roman roads of the best type a trench was first excavated about 3 feet deep, and the entire width of the road and that where poor material was present, it was removed and replaced by material of a suitable nature and the whole subgrade was thoroughly compacted by ramming. Four distinct layers were usually placed in these roads. The bottom course was composed of two courses of stones placed in lime mortar. On top of this was placed the rubble which consisted of broken stone, or when available broken bricks, potsherds, etc. When the latter made up the aggregate more lime was used in the proportion of 2 to 1. This course was thoroughly rammed and usually about 9 inches thick. The third course was composed of old building material such as brick bats, and broken tile, and mixed with lime in the proportion of 1:3. This course was not rammed and the lime was mixed hot. Above this course came the tops or wearing surface, which was made of blocks of flat stone set in mortar, and fitted together with great care and refinement.

It can be seen that the third layer was much softer than any of the others and was placed purposely below the top layer which was designed to take the wear of the traffic. Such care in road construction must without question have been the result of great study and practical tests. The investigation of Roman road building makes four distinct features worth the fullest consideration.

First, an absolutely secure foundation was always obtained. Second, a resilient or cushion layer was placed beneath the wearing surface. Third, the four layers composing the road had different coefficients of expansion probably precluding the development of definite lines of a stress brought about by contraction. Fourth, the wearing surface was of a material not only capable of withstanding the wear of traffic but atmospheric conditions as well.

The popular supposition that the Roman method of road building is a lost art will not bear analysis. We could build not only similar roads but far more durable under the same conditions. Roads of the Roman type under modern traffic conditions in the city would last but a few years. The estimated cost is \$350,000 a mile. Our heavy wagons and vans and shod horses were not in use in the time of Rome's heyday.

The nearest approach to the Roman road we have now is the best grade of paving brick on a concrete foundation with a 2½ inch sand cushion. It suits the automobile traffic admirably but is very hard on the feet of horses. The concrete foundation for both brick pavements and asphalt streets rarely cracks, except from faulty foundations. Contraction seems to result from the great range of temperature to which the road surface is subjected and the fact that construction generally takes place in the warmest season of the year when expansion is greatest. Experience with concrete floors and pavements laid on earth foundations inside buildings establish this opinion as correct. Concrete gives perfect satisfaction when protected from direct exposure, so that the endeavor now is to devise some treatment that will make it an ideal material. Mr. Page's idea is that most concrete roads are impaired by too much uniformity in the mixture of concrete, and that the composition is too homogeneous; concrete not yielding much to the blows of traffic and being brittle these two characteristics facilitate spalling. The general specifications to obviate these troubles suggested by Mr. Page are:

6 inches of No. 1 broken stone mixed with the screenings below half an inch and thoroughly rolled with a steam roller as a foundation course. On top of this

spread a uniform layer about 1 inch thick of rather dry cement and mortar. Over this course of mortar at once spread about 3 inches of No. 2 stone which should be immediately rolled with a steam roller until the cement and mortar rises flush with the surface. Such a road as this, it is thought, would have many advantages and could be opened for travel in a short time, and would not be nearly so rigid as an ordinary mixed concrete road. There would be a minimum amount of cement used and no two horizontal sections of such road would have the same coefficient of expansion. Rock of the very highest resistance to wear could be used without any consideration of its natural blinding power, which is so important in the ordinary macadam road. Another important feature is the absence of dust on the surface, a result earnestly sought after by highway engineers. Such a road would not cost more than 10 or 15 cents per square yard more than ordinary macadam and about the cost of spreading bituminous dust preventives.

The type of construction mentioned is possible as a cheap method of using concrete in road building, but another way of approaching the problem is to so treat Portland cement that with the reduction, resilience is greatly increased. Even if the tensile strength was greatly lessened this treatment would be of great advantage. Asphalt meets successfully the wear of traffic, is of a semi-plastic nature with a very low tensile strength and no elastic limit. Its adhesiveness to mineral matter, however, permits it to be tempered by a mineral aggregate to the desired consistency. Portland cement added to asphalt surface mixtures is very desirable. With this information before it the Office of Public Roads has begun an investigation to ascertain the practicability of mixing semi-asphaltic base oils with Portland cement concrete, for the purpose of obtaining the desirable qualities of both cement and asphalt. So far results have been somewhat encouraging. Mixtures have been successful with as high as 20 per cent of oil and 27 and 28 day tests for toughness and tensile strength showed a regular increase. Briquettes with 5 per cent additional of oil broke in tensions at 230 pounds after seven days in soak, and 296 pounds after 28 days; with 10 per cent oil 228 pounds after 28 days; with 15 per cent 246 pounds and with 20 per cent 203 pounds.

The results obtained were practically the same under impact as those under tension. Increased proportions of oil retarded both the initial and final set in increasing amounts. The tensile strength and toughness were also less but not in like proportions. Concrete in a mixture with animal or vegetable oils disintegrates, and of course this may be the case with petroleum. Investigations are to be pursued until the several points under consideration are definitely settled. Parallel tests with tar and cement have been made but with practically negative results.

If cement can be mixed with asphaltic base oils and increased toughness obtained, its value as a road building material will be of course very greatly increased. The matter of mixing is simple and can be done in an ordinary concrete mixer, all that is necessary being to have the cement thoroughly wet before the oil is added. The presence of lime causes the oil to quickly emulsify and become evenly distributed. Mr. Meyer has suggested that the addition of hydrated lime would permit the use of greater quantities of oil, and Mr. Page believes the suggestion a practical one, and that concrete mixed in the manner proposed will be impervious to water.

No final results can be known until actual service tests now under process are completed. In this connection the question of road dressing is more or less related, and the experiments being now made in Washington under the immediate charge of the Public Roads Office will, when completed, be quite a practical lesson in dust prevention.

### CHRIST TROD CEMENT.

Several of the faculty of the University of Washington were discussing the statement of a Dowieite of Zion City that he had no use for a cement pavement because Jesus Christ never walked upon one. Aside from the questionable taste of the remark from a professed holy man, Prof. Edmond S. Meany questioned the Dowieite's historical knowledge. "Cement and concrete," said Prof. Meany, "have been known to man since before the time of Christ. In the British Museum there are specimens of concrete and cement work made before the coming of the Savior. When I say that Christ undoubtedly trod cement pavement I base my statement on the knowledge of cement and concrete structures that were in Jerusalem in His day. For instance, there was the great cement aqueduct bringing water to Jerusalem, built several hundred years before Christ. When Christ drove the money changers from the temple he undoubtedly trod cement. The floor of the temple itself and the walk approaching it were probably mosaic and stone set in cement."

The Pauly Concrete Machinery Company, of Manhattan, has been incorporated to manufacture and deal in concrete construction materials with a capital stock of \$1,000,000. The incorporators are A. A. Pauly, of Youngstown, O., and J. S. Watson and G. F. Mattuck, of New York City.

The Scandent Construction Company, of Manhattan, has been incorporated with a capital stock of \$1,000,000 to conduct a building and real estate business. The incorporators are J. T. Odell, H. C. Right and A. D. Meloy, all of New York City.

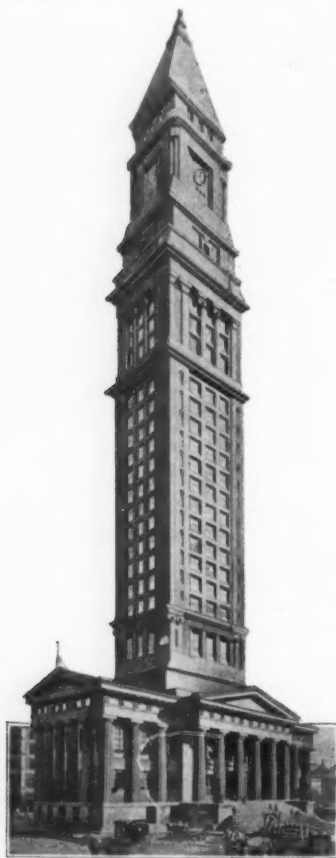
The Pleasant Hill Cement Tile Company, Pleasant Hill, Ill., has been incorporated with a capital stock of \$2,500. The incorporators are I. D. Webster, John D. Webster and George Caylor.

## BOSTON CUSTOM HOUSE.

Familiar Architectural Pile to Be Enlarged Without Materially Changing Its "Stone Front."

The task of utilizing the major part of an old structure of large dimensions in the construction of a new building necessarily presents many difficult problems to be solved by the architect and finally executed by the builder. In the case of the Boston Custom House it was desirable to preserve this historic and imposing architectural monument and this has been provided for in the plans for its enlargement, which is rendered necessary by the very considerable growth in the business of the port since the old building was completed in 1847, after ten years occupied in its construction, which involved an expenditure of upwards of \$1,000,000.

The Boston Custom House, which is situated on made land in India square near the water front, is a massive stone structure 100'x150' in dimensions. The plan for its enlargement consists in the construction of a rectangular steel tower of twenty-one stories, having a height of over 500 feet. To cover the cost of the enlargement and remodeling, Congress has made an appropriation of \$1,800,000. This so-called tower will rise above the old dome and be supported on new columns and foundations carried through the original building, without interfering with the north and south wings and without changing materially the appearance of the old



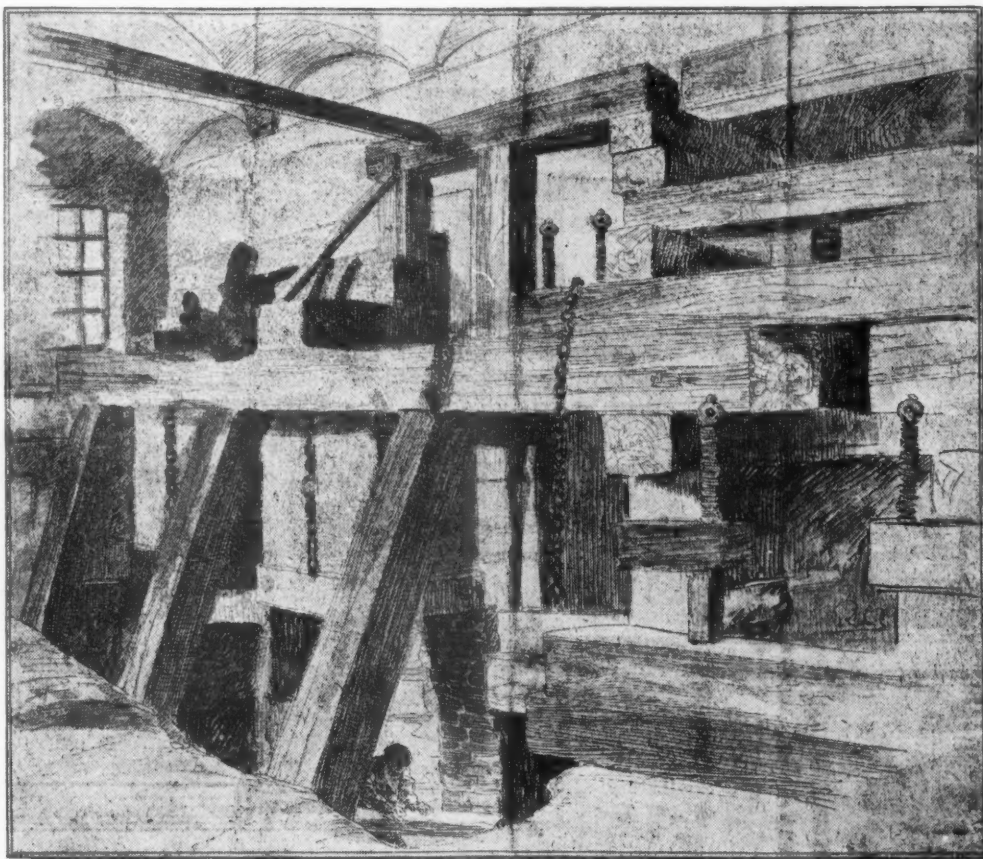
BOSTON CUSTOM HOUSE.

"stone fort," so long a familiar architectural pile and landmark to Boston merchants and seafaring men.

The new tower will have sixteen steel columns located on the sides of a 59' 4"x73' 10" rectangle concentric with the building. The columns are supported on six rectangular concrete piers.

The first matter to be considered was that of providing adequate foundations to carry the weight of the tower, and in order to do so new foundation piers, entirely independent of the old structure, are to be built by the contractors, Norcross Bros. Company, of Worcester, Mass., who were awarded the contract for the foundation work, the contract for the superstructure not yet being let. The fact that the original foundation would be inadequate was evident from the settling of the present building, which has been noticeably taking place, attention having been directed to it over twenty years ago, and it is believed it is likely to continue.

The removal of the double dome was included in the contract, and this will be replaced by a lighter



THE MASSIVE SHORING TIMBERS WHICH HOLD UP THE SEPARATE WALLS.

one after the completion of the tower. Also the removal of twelve interior marble columns. Both of these jobs presented complicated problems and required the exercise of superior skill and experience in this line of work. Even with this, the disturbance of the old foundation and the necessary separations which the new enlargement required being made, have had the effect of weakening the ability of the old foundation to carry its load and caused delay in the progress of the work, especially as the area in which the operations are required to be carried on is limited to the dimensions of the interior of the old structure. Owing to the nature of the operations and providing for the new foundation, the upper parts of the east and west walls have been shored to carry the upper part of the building and to support eight interior granite columns in the first story. The contractors went down 80 feet before piercing through the wall of clay.

The present custom house is in the form of a Greek cross and in the Doric style of architecture. In the general business room of the structure, there were twelve fluted marble columns, 26 feet long and 36 inches in diameter, weighing about 16 tons

each and were supposed to be monolithic during all these sixty years, and had always been regarded as a striking feature. For this reason it was decided to preserve them, and much care was exercised in their removal. In doing so it was discovered that each of them was made of two or three



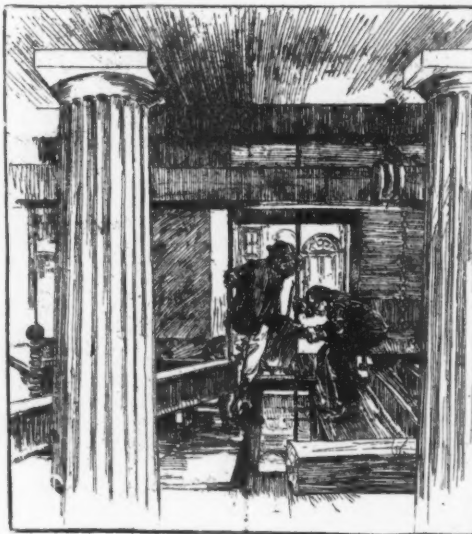
THE OLD BOSTON CUSTOM HOUSE.

pieces admirably well connected together, so that the horizontal joints were not perceived.

The new piers are made of 1:3:5 Lehigh Portland cement concrete mixed in one Smith and one Ransome machine, operated by electric motors. Work was started in December, 1909, for the purpose of exploring the soil under the foundations. The removal of the double dome was commenced in June, 1910, and since that time over one hundred men and fifteen teams have been employed on the job. Up to the present time 6,000 tons of concrete have been used, and between 11,000 and 12,000 tons will eventually be required.

The work is being done under the direction of the supervising architect, J. Knox Taylor, and of Peabody & Stearns, resident architects. The contract for the substructure was awarded to the Norcross Bros. Company, J. H. Merrill, engineer; F. A. Whipple, inspector, and E. E. Hunter, superintendent for Norcross Bros. Company.

Brown & Upperman, of Wyoming, Ill., will engage in the manufacture of concave concrete blocks for silos and concrete stock tanks, having purchased machinery.

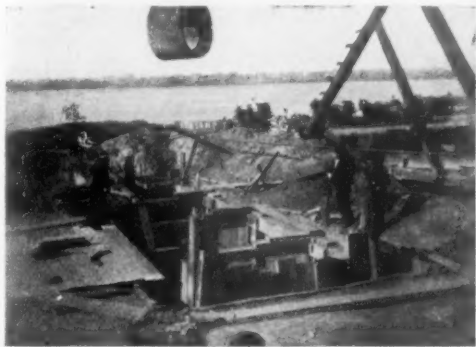


"JACKING DOWN" CONCRETE.



### REINFORCED CONCRETE TUNNEL.

Louisville, Ky., April 20.—Work has been completed on an unusual piece of construction for the Kentucky Electric Company, of this city, which operates an electric light and power plant. The use of reinforced concrete in connection with a tunnel, built from the plant of the company to the low-water mark of the Ohio River, while not absolutely new, was interesting, and attracted considerable attention in this section. The design for the work was that of Louis Streng, chief engineer of the company.



LOWERING REINFORCED PIPE INTO TRENCHES, KENTUCKY ELECTRIC COMPANY, LOUISVILLE, KY.

A circulating water system was planned for the power plant, and in order to save the cost of the water supply the company decided to tap the Ohio River itself, the plant being located only a block south of the stream. Plans were accordingly drawn for a tunnel, which was to enter the river at the low-water mark. In order to secure water at all times an incline toward the power plant had to be provided for, this requiring an excavation which at some points reached a depth of 40 feet.

After the trench had been dug a line of 52-inch concrete pipe was laid from the power plant to the river. The decision to use concrete instead of vitrified sewer pipe, which could have been secured in that size, was considered a victory for the material decided upon. Another point of interest was that instead of laying the concrete down in the trench, the pipe was constructed in 3-foot sections, the concrete being allowed to set and then placed in position.

It was thought that it would be best to test the pipe before putting it in place, in order that any defects in construction might be noted. The wisdom of this was shown, for some of the pipe, which was made in cold weather, was found to have been allowed to become exposed without proper protection, cracking as a result. When care was taken to see that the pipe was properly made, however, there was no trouble experienced in connection with it.

The pipe was 5 inches thick, the interior diameter therefore being 42 inches. The American Steel & Wire Company's triangle mesh was used for reinforcing, two sheets being utilized. The connections between the pipes were made by bars, hooked at the ends and fixed in the concrete at the time of the formation of the pipe. These were joined together



CONCRETE PIPE BEING TESTED.

when the pipe was put down, making a firm and reliable joint. Six such connections were provided for, the rods being 1 1/4 inches in diameter.

Steel collapsible forms were used for the manufacture of the pipes. These were made in parts, the top and base being of cast iron. A patent locking form enclosed the two after the concrete was

poured, and the mix was allowed to set for 30 hours before the forms were removed.

The specifications provided for the use of either screened gravel or crushed stone, and some of both were utilized. Speed's and Lehigh cement were used in the manufacture of the pipe. The work was done by the Reinforced Concrete Pipe Company, of Jackson, Mich., and considering the difficulties experienced on account of cold weather, the size of the excavation and the weight of the pipes, which had to be handled carefully, being lowered into the trench with a crane, the job was handled in fine shape.

The tunnel was 550 feet long, so that about 183 sections of pipe were used. Though the cost of the construction was considered, the saving in the water supply of the company, it is figured, will pay for it in a comparatively short time.

The Kentucky Electric Company is planning the construction of an addition and extension of its power plant, and it is expected that the new buildings to be erected will be largely of concrete. This material is being greatly favored in this city for purposes of the kind, the power house of the Fetter Lighting Company, which was recently put in commission, having been built of reinforced concrete by the National Concrete Construction Company, of Louisville.

### THE COST OF CONCRETE POLES.

The Auburn Mutual Light & Power Co. has recently erected two miles of concrete poles as an experiment to determine the cost of erecting and planting. The poles range from 38 to 60 feet in length and are octagonal shape, reinforced with four rods. The cross trees are of galvanized metal. The forty-foot pole contains about 200 pounds of metal and four sacks of cement, and weigh from 2,800 to 3,000 pounds. The average cost of the pole ready to set was \$7.65 and the cost of setting



TRIANGLE WIRE MESH USED IN REINFORCING PIPE.

amounted to \$3.30. These figures are somewhat lower than shown by the experience of other companies.

### THE FALLSWAY BOULEVARD SEWER.

The Fallsway Boulevard in Baltimore now being constructed over the Jones Falls stream passing through the City of Baltimore into the storm water sewer system is going along very rapidly.

The storm sewer system is part of a comprehensive sewer plan and is in the aggregate a \$20,000,000 proposition designed by Chief Engineer Calvin W. Hendrick for the sewer commissioner. It is intended to relieve the regular sewer system carrying sewage to the Back river disposal plant and carry off the surface drainage along with the water of Jones Falls stream. From Baltimore street to Mount Royal avenue, 6,700 feet, the work extends, and the construction consists of three rectangular reinforced concrete covered conduits. Two of these are twenty feet wide by fifteen feet six inches high, and the other twenty feet wide by twelve feet six inches high. They are parallel to each other and fill the bed of the stream. The smaller is on the east side of the stream and built to carry off the surface drainage. As it will be in constant use, it is lined at the bottom with vitrified brick in addition to the one-inch-thick smooth granolithic concrete lining, with which all the conduits are finished. These reinforced concrete conduits have concrete foundations on a solid rock bed, except near Baltimore street, where it is thought piling will be necessary. The flat tops of the conduits will be very strong to carry the heavy traffic that will pass over the street when completed. An additional \$1,000,000 loan was authorized for the Fallsway work, which will complete the roadway over the conduits.

### ILLINOIS TRACTION SYSTEM VIADUCT.

We are printing a photograph of the Illinois Traction System viaduct at Springfield, Ill., the concrete work for which was built by Driscoll & McCalman, of Decatur, Ill., as described in the March number of Rock Products. Besides the retaining abutments at each end, the pedestal piers cover one-half mile of the ground, making this the largest structure of its kind in the state. This Decatur firm reports that its contract on the McKinley lines, between Joliet and Morris, will require approximately 6,000 cubic yards of concrete in bridge abut-



ILLINOIS TRACTION SYSTEM VIADUCT, SPRINGFIELD, ILL.

ments and reinforced culverts. Mr. McCalman says that he is glad that there are no unusual conditions connected with this work.

### DON'TS FOR CEMENT USERS.

Don't allow cement to freeze before it is thoroughly hardened.

Don't retemper and use concrete which has become set on the mixing board.

Don't use a dirty or loamy sand.

Don't use soft stone or broken brick in concrete where great strength is required.

Don't expose freshly made concrete to the hot sun.

Don't allow concrete to dry out too rapidly.

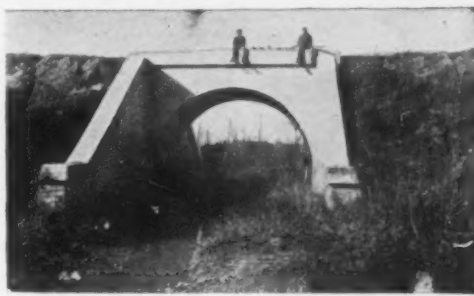
Don't apply fresh concrete or cement mortar to an old or hardened surface without first thoroughly soaking with water, and hacking a rough surface on the old material. Clean thoroughly and apply a very thin cement wash.

Don't use a dirty or impure water in mixing concrete.—Mason Builder.

An interesting point has come up in the city government in connection with contracts awarded for the new Point bridge. The Robert W. Hunt & Co. received the contract for testing the steel work in the bridge at 55 cents a ton, although its bid was considerably higher than that of Hildreth & Co., whose estimate was 37 cents a ton. Public Works Director Joseph Armstrong awarded the contract to the Hunt company because he did not believe the work could be done at the lower figure and desired above all that a thoroughly reliable job be performed. The same contention is likely to be made in connection with concrete work this spring on different structures.

### CONCRETE ARCH BRIDGE.

This arch bridge was built by the New York Cen-



SOLID CONCRETE ARCH, PROPERTY OF N. Y. C. RY.

tral railroad over a small stream in Wabash County, Illinois. The structure is 20 feet long, 18 feet high, with wings 35 feet wide. This arch carries the track of the Cairo division, over which their largest engines and trains are run. The wooden structures before it were soon pounded apart by the heavy traffic and were an endless expense.

# SAND-LIME BRICK

## ROCHESTER COMPOSITE BRICK COMPANY.

The Rochester Composite Brick Company is one of the live wires in the sand lime brick business. They have run almost continuously since their plant was completed five years ago, and the number of beautiful buildings in the city of Rochester which have been built of their sand lime product shows better than words the success that they are making. On this page an illustration is shown a new building for the Hollister Lumber Company, of Rochester, in the walls of which there are more than 500,000 sand lime brick. A number of other factory buildings have just been built in Rochester of sand lime brick and amongst others things the tallest chimney in the state.

Rochester is one of the towns which is always shoving towards the center of the stage with an-



HOLLISTER LUMBER COMPANY BUILDING BUILT OF SAND LIME BRICK.

nual and industrial expositions, held in the fall of the year, and one of the illustrations on this page shows the exhibit of the Rochester Composite Brick Company, in which their sand lime brick was prominently in evidence in connection with the Composite granite stone for trimmings, which is an important branch of the operations of this concern. It is said that the New York Central Lines have adopted sand-lime brick for the construction of railway stations, and particularly the big new station which is to be erected in Rochester. Doubtless this is much to the credit of Wm. M. Burch-

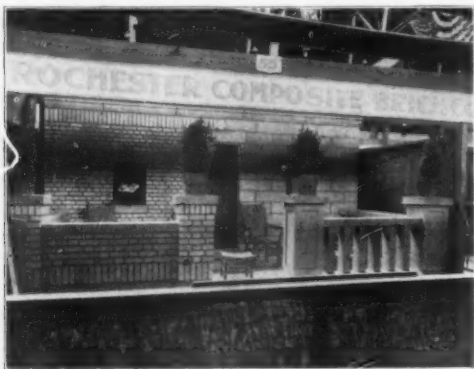


EXHIBIT OF ROCHESTER COMPOSITE BRICK COMPANY AT ROCHESTER INDUSTRIAL EXPOSITION.

field, the wideawake sales manager of the concern, whose own popularity as well as that of his goods has a whole lot to do with the success of the concern.

## FIVE DON'TS FOR SAND-LIME BRICK MAKERS.

The following don'ts have been suggested by those who have had experience:

"Don't think that any sand will do and that round grains do not matter. They are useless and only cause trouble.

"Don't think that lime can be slaked any way or sometimes you will have 'blown' brick.

"Don't think that time is not needed. You cannot hurry Nature. She was there before you and will outlast you easily.

"Don't hurry the hardening or the time in the silo if you have one. Both these machines cost less than disappointed customers.

"Don't forget that oil and politeness are both good lubricants. The former is especially useful in the manufacture of clay products; the latter helps to sell the goods."—Brick and Pottery Trades Journal, London, England.

The Urbana Gravel Co., Houston, Texas, has been incorporated with a capital stock of \$30,000. Incorporators: C. R. Cummings, F. A. Langbehn and G. A. Webber.

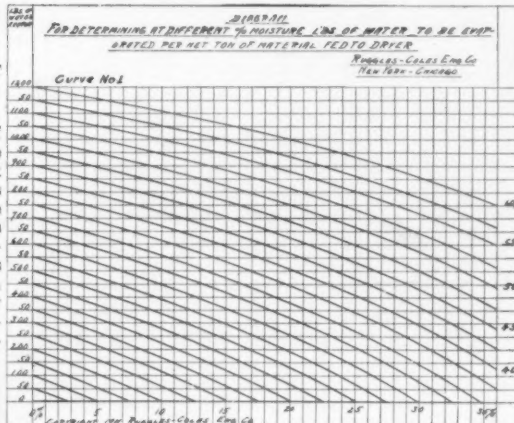
The Builders' Sand & Gravel Co., Oklahoma, Okla., has been incorporated; capital stock \$50,000. The incorporators are B. S. Utterback, C. B. Kidd and B. M. Lovelace.

Moreing Bros., of Stockton, Cal., are preparing to install a new gravel plant at Tesla, Cal., the new machinery having a capacity of handling about 400 tons per day.

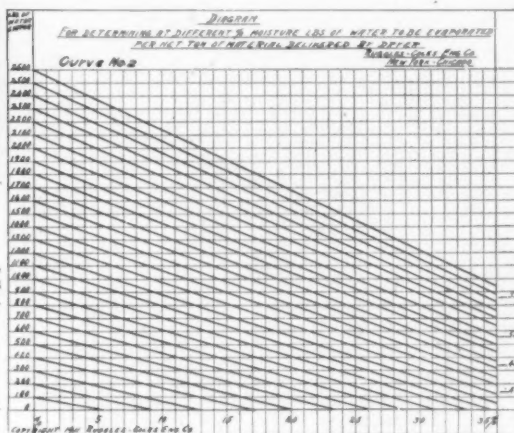
## USEFUL CURVES IN DRYING CEMENT ROCK, CLAY AND SIMILAR MATERIALS.

Cement companies use dryers for treating cement rock, clay and other argillaceous materials as well for drying the coal so that it may be pulverized and made ready for the kilns. The amount of water to be evaporated in reducing a given ton of material from one percentage of moisture to another is often desired to be known quickly. The curves prepared by the engineering staff of the Ruggles-Coles Engineering Company fill this need and are reproduced herewith.

To make the use of these curves clear take a specific case of reducing cement rock from 6 per-



cent moisture to 1 percent. Referring to curve No. 2 follow the diagonal opposite 5 percent at the bottom until it intersects the ordinate of 1 percent. Then follow across to left and the figure 140 pounds is the amount of water to be evaporated per net ton of the cement rock delivered by dryer.



Curve No. 1 is used in the same way and from it can be determined the pounds of water to be evaporated per net ton of material fed to dryer.

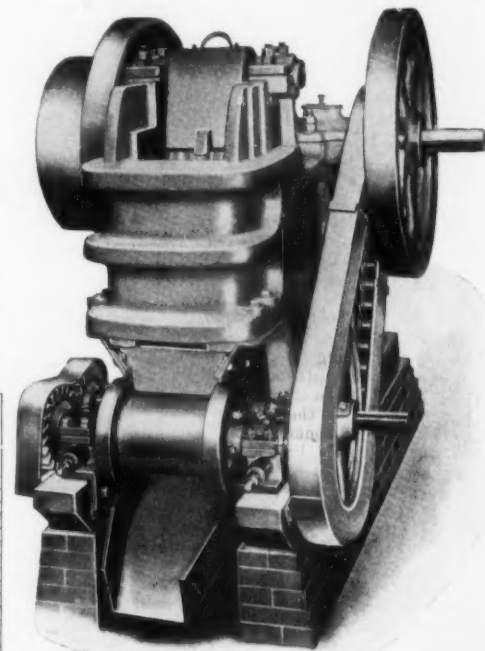
A considerable saving of time can be effected by the use of these curves and the Ruggles-Coles Engineering Co., 50 Church St., New York, will send blue prints of them on request.

# Side Talk

in which the Advertiser tells his own story.

## THE MARTIN CRUSHER.

The Henry Martin Brick Machine Manufacturing Company at Lancaster, Pa., say that at no time in the history of their company has the demand for their type of crushers been greater. They call particular attention to their new and modern type of crusher, the advertisement of which will be found in this issue. These crushers and grinders are built in four sizes and on account of their great adaptability have found great favor with all users of crushers for no matter what purpose. These crushers are adjusted so as to crush stone or any



THE HENRY MARTIN BRICK MACHING MFG. CO. CRUSHER.

other kind of material such as limestone, sandstone, ironstone, cobblestone, hard brick, vitrified brick, silica rock, pebbles, gravel, granite, marble, lime, oyster shells, coal, cinders, coke plaster or concrete materials, down to the fineness of sand or coarser grades if required.

These crushers will do the work of a heavy, expensive machine, and will require a small amount of power to operate them. The rolls can be set from  $\frac{1}{8}$ " to  $\frac{3}{4}$ " apart. When crushing to 1",  $1\frac{1}{2}$ " or 2", remove the front part of the hopper above the rolls and insert chute above the rolls, it will catch the stone as it leaves the jaws and chute them to the front of the crusher; throw off the chain so that the rolls remain idle, in coarse crushing. No slivers or spawls escape, all are caught and crushed to a uniform size. The jaw plates are removable, they are made of a special mixture, chilled semi-steel. The crusher rolls are also chilled semi-steel and all the parts are easily and cheaply replaced when worn. It is built for great strength and durability.

## TROY WAGONS.

Among the recent trade literature which has come to our desk and which is especially worthy of comment is the booklet, "Inside Facts for Troy Salesmen," issued by the Troy Wagon Works Company, Troy, Ohio. The folio is replete with splendid photographic prints, taken in all parts of the country under varying conditions, of the Troy hauling and spreading wagons.

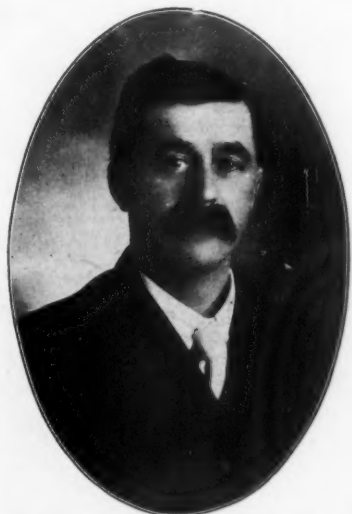
It also contains a great deal of information of value, there being in conjunction with the matter descriptive of the construction of the wagons, a department under the head of "Side Talk." In this may be found many pointers of great benefit to the salesmen of Troy Wagons, as may be, also, under the department of "Special Instructions for Troy Salesmen."

We would suggest that those desiring this booklet write to the Troy Wagon Works Company for a copy of the same, which will be mailed promptly.



## UBBINK STEEL FORMS.

In the building of sidewalks and curbing and gutters there is a small fortune being expended every year foolishly by contractors who use lumber for forms. Joe Ubbink, president of the Ubbink Steel Form Company, 214-216 Pier street, Port Washington, Wis., is the inventor of the adjust-



JOE UBBINK, PORT WASHINGTON, WIS.

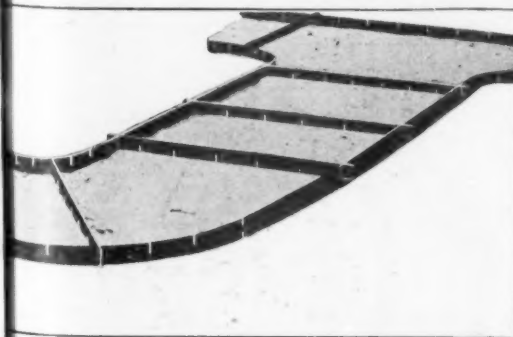
able, all-steel sidewalk and curbing and gutter form. This is one of the most valuable inventions which has been placed on the market in a number of years and hundreds of them are now in use by contractors in all parts of the country.

They are not only more economical than the



UBBINK GUTTER FORM.

old method, but they can be used with such ease and rapidity as to enable the worker to do almost twice as much work in a day as with the old method. It can readily be seen that the steel sidewalk forms will soon supplant the old wooden forms, as the contractors by using this new method



UBBINK SIDEWALK FORM.

are really doubling their profits.

One Texas contractor using the Ubbink all-steel adjustable curb and gutter form says he has used

them six times in one day. This means quite a large amount of money saved in time, labor and the amount of work accomplished over the old method. One man can set up 100 running feet of their forms in a half hour, while to set up the same amount of lumber takes two men half a day.

Another advantage in using the Ubbink all-steel forms is that the forms make a clean-cut expansion joint, free from cracks or any other defects. It is plain that a saving of one and one-half cents per square foot can be made on all sidewalk work and five cents per lineal foot on all curbing and guttering. Contractors engaged in this line of work would do well to investigate this system and write today to the Ubbink Steel Form Company, 214-216 Pier street, Port Washington, Wis., who will be glad to furnish them with all cost data and information relative to the steel forms.

## UNIT COSTS OF CONCRETE BUILDINGS OF VARIOUS TYPES.

Lockwood, Green & Co., architects and engineers for industrial plants, Boston and Chicago, estimate the approximate unit costs of reinforced concrete buildings of various types as per the figures in the table below. These figures coming from a firm that has had such an extensive experience in this line are of more than usual value.

Type of Building and Dimensions—					
Machine shop, 120x50, 4 stories.....					
Machine shop, 220x100, 1 story, sawtooth skylights.					
Cartridge factory, 223x56, 2 stories.....					
Cotton mill, 550x129, 2 stories.....					
Weave shed, 341x231, 1 story, sawtooth skylights..					
Power house, 90x62.....					
Store house, 181x56, 4 stories.....					
Store house, 256x100, 12 stories.....					
Store house, 223x56, 2 stories.....300 lbs. and					
	Cost above		Cost including		
Live load	foundation.		foundation.		
per sq. ft.	sq. ft.	cu. ft.	sq. ft.	cu. ft.	
150 lbs.	\$1.05	\$0.08	\$1.17	\$0.09	
	1.65	0.09	1.75	0.10	
300 lbs.	1.40	0.09	1.55	0.10	
75 lbs.	0.99	0.07	1.06	0.075	
125 lbs.	1.66	0.064	1.79	0.07	
	2.53	0.115	2.67	0.12	
150 lbs.	1.08	0.065	1.15	0.07	
150 lbs.	0.90	0.09	0.98	0.105	
1,000 lbs.	1.20	0.08	1.35	0.09	

There has recently come to our desk a booklet issued by the Novo Engine Company, Lansing, Mich., describing in a very effective and comprehensive manner the merits of the Novo engine and illuminating the technical features of same, which serve to place this engine in the ranks of the more perfect types of machinery of its kind.

This little bulletin is an excellent specimen of the printer's art, and is further enhanced by splendid halftone engravings bearing on the many uses for which the Novo engine is adaptable. The covers are in two colors, and the booklet also contains testimonials from a number of prominent users of the Novo engine who found them to be entirely satisfactory in the various capacities for which they were assigned. A perusal of the booklet would be well worth the attention of those of our readers who find the gasoline engine necessary to their business, and we heartily recommend sending for same, which would be cheerfully furnished by the Novo Engine Company, as would also a catalogue and quotations of the Novo line of engines.

The "Cornice Work Manual" is the title of a recent publication placed on the market by the American Artisan, Daniel Stern, publisher and proprietor. It is a compilation from the files of that publication, by Sidney P. Johnston, and is an exposition of cornice work in all its branches, and treats with great clearness the problems of the cornice, beginning with the simple rudiments.

The book is bound in cloth and contains 234 pages and many diagrams and illustrations. It is the 1912 edition and may be had by application to the American Artisan and Hardware Record, 537 South Dearborn St., Chicago, Ill. The price of the book is \$3.50.

The Hall Concrete Products Company, Philadelphia, was incorporated under Pennsylvania State laws, February 21. Capital \$25,000.

## WATSON'S AUTOMOBILE GARAGE.

We take pleasure in printing on this page a halftone of George H. Watson's automobile garage, Rock Rapids, Iowa, built from Anchor Continuous Air Space Blocks. Size of building, 50x110 feet. Basement, 10 feet deep. First story, 14 feet. Second story, 12 feet. All smooth 12-inch Anchor Blocks used from footing up. 22-inch pilasters every 16 feet. First floor, 8 inches thick reinforced concrete, supported each 16 feet by 18-inch I-beams. Second floor self-supporting, 50x110 feet, by 18-inch I-beams and bridge truss in partition walls in second story. The one truss supporting both ceiling and roof. The garage is considered by many leading architects to be the finest in the state of Iowa. The plaster was applied direct to the concrete blocks without lath or furring strips.

This building is giving entire satisfaction and the basement is used for storage of automobiles during the winter season because of the dry wall made by the use of Anchor Continuous Air Space Blocks.

The second floor is used for lodge rooms, the rear part contains three very attractive and comfortable flats, which are large, roomy and comfortable. The floors between the first and second stories are entirely soundproof, and the noise of the machinery below does not penetrate into the living apartments on the second floor.

The building was completed during the early part of 1909 and has given complete satisfaction ever since. There are no cracks in the walls whatever, a fact which speaks well for the strength and sta-



WATSON'S AUTOMOBILE GARAGE, ROCK RAPIDS, IA.

bility of the Anchor Concrete Blocks used. The footing for the building is three feet wide at the bottom and is two feet in thickness.

The Anchor Concrete Stone Company, of Rock Rapids, Iowa, furnished the standard 12-inch Anchor Blocks used throughout this building. This company manufactures the "Standard" and "Anchor Junior" block machines, and because of the continuous air passage walls built with blocks made by these machines are practically frost and moisture proof. The blocks are bonded together in construction with four one-fourth inch galvanized iron rods eight inches long and turned one inch at each end.

All machines are sold direct to the trade. Catalogue and prices will be furnished promptly upon application to the Anchor Concrete Stone Company, Rock Rapids, Iowa.

Universal Portland cement was sold last month to the Wayne county (Michigan) road commissioners for forty miles of all-concrete pavement to be constructed this spring. This will take about 100,000 barrels in all and is the largest order for cement for concrete road construction on record.

It is an interesting fact that autoists riding through Wayne county have splendid roads throughout except where some of the small town streets are encountered. These are becoming better, but are not comparable with the county roads, thirty-three miles of which are of the all-concrete type.

The business of the Richardson Scale Company, of Chicago, Ill., has increased so much during the last twelve months, that they have found it necessary to move to much more extensive offices on the nineteenth floor of the Republic Building at 209 South State street. Their address after April 16 will therefore be 209 South State street, Chicago.

The Ruggles-Coles Engineering Company, 50 Church street, New York City, and McCormick Building, Chicago, have appointed J. L. Danziger, 38 St. Sulpice street, Montreal, as agent for their stationary dryers for mining and manufacturing plants.

### SCHOOL HOUSE CONSTRUCTION.

#### A Suburban School Near Chicago in Which the Lives of the School Children Are Safe From Fire.

The value of concrete as a fire resisting building material has been the subject of many articles in *ROCK PRODUCTS*, and in view of the recent work of the United States Bureau of Standards, it is now established that buildings of concrete construction are the most nearly fireproof as it is possible with modern engineering skill to produce and still keep the cost of same within the range of reason.

Our readers will recall an article a number of months ago about the terrible Collingwood school-house disaster, in which the lives of hundreds of little school children were snuffed out because of the inflammable nature of the construction of the school building which was furnished to them by the state educational authorities. The Collingwood school house was what, in common parlance, would be termed a very substantially built structure. All of its walls were of brick trimmed with Ohio sandstone and its front elevation, even after the fire, looked to be as permanent as a fortress. The trouble was the interior construction. The floors were carried on wooden joist, the partitions were of studding and lath, and the front steps inside of the main hallway of the building were of wood.

The boiler room was located under the staircase of the main entrance of the building, and when the alarm of fire was given the children, who had been taught the fire drill of marching after their teacher to the front door, all marched to their death because the fire at the start burned a hole in the staircase that led down to the main entrance.

Immediately after there was a great deal of attention given to better fire protection in the construction of school houses and in Indianapolis there was a concrete school house built, and several school houses of concrete construction were erected in New Jersey and eastern Pennsylvania. In fact in most of the large cities the construction of school houses is rapidly going into a more fireproof type, and it should be made impossible for a fire to get a start in a school house building where so many irresponsible children and teachers who are unprepared for such an emergency spend the greater part of their days. But the vast majority of the school houses of the country are not located within the limits of cities where the taxation is sufficient to provide funds for the construction of high priced school buildings, but they are located in suburban and country districts where heretofore the cost of fire protection has been impossible.

It is interesting in this connection to state that the school board in the pretty little village of Willow Springs in Cook County, Illinois, are now constructing a school house which, when completed, will be the most nearly fire resisting school house ever built in this country in suburban or country district. All of its walls, partitions and floors, including the main landing of the front steps, are constructed of concrete tile and reinforced concrete in combination. This school board, headed by Geo. E. Farrel, principal of the Summit school district, deserves considerable credit for the care and intelligence with which it has worked out the problem of the school house for Willow Springs. The architect is G. W. Ashby, the well known specialist in the line of school building, and in the case of the Willow Springs school house he has worked out a perfect little gem.

The contractor of this building is A. F. Nagel, an all around concrete expert, of Lemont, Illinois, and our illustration shows the method of laying the concrete floor, using floor tiles the shape of which was designed by Ross F. Tucker, of New York, so as to form in the process of casting concrete I-beams. All of the tiles used in this building were manufactured by the Chicago Structural Tile Co., using the now famous Pauly process. As a matter of general interest and especially to school trustees and educational boards, the Willow Springs school house proves that it really costs no more at this period of the world's development to construct a school or hospital entirely of concrete and concrete products so as to finish the building without excessive cost, which has made the selection of fireproofing in the past a thing beyond the reach of the appropriation.

The Cumberland Concrete Construction Company has been organized in Clarksville, Tenn., with \$5,000 capital stock to engage in the manufacture and sale of concrete blocks and bricks. Plans have been prepared for the new company's plant, which will be equipped in the most modern fashion, occupying a building 60 by 24 feet in dimension. A capacity of 10,000 bricks and 2,000 blocks per diem for the enterprise is to be furnished. J. F. Gracey, Jr., is president of the Cumberland Concrete Construction Company, and T. D. Johnson, Jr., is general manager.

### REFLECTION OF LIGHT AND HEAT.

#### A Weak Point in Concrete Pavements That Can Be Easily Remedied.

The strongest objection that is raised to concrete pavements is the reflection in hot weather of light and heat, and this objection can be easily remedied by coloring the surface mixture to a cool slate gray tone with Lampblack.

In many parts of the country this coloring is required by city ordinance or town by-law, because it not only does away with the discomfort and injury to eyesight, which the reflection causes, but it also produces a uniform color that is much more artistic and pleasing than the varied natural tone of the uncolored concrete.

In the northeastern part of the country this practice is practically universal, even where no by-laws or ordinances require it, and the same is true in many other sections, but in the middle West and South, where the reform is most needed, because of the clearness of the atmosphere and the hot, dry weather, the progress of reform has been slower.

It is surprising that doctors and oculists throughout the country have not united in demanding that all pavements shall reflect light as little as possible because the slanting, dazzling rays are distinctly injurious.

The accompanying photograph illustrates the situation in the Southwest. It was taken in May on one of the principal streets of Oklahoma City, and shows vividly what the inhabitants of that and other cities are suffering without realizing the cause.

A motorman in Oklahoma City knew that his eyes were being injured, but did not realize the cause until it was pointed out to him, and then he easily recollected that he had not been troubled until the suburban streets through which his car ran had been paved.



FIG. 1—SNAPSHOT ON ONE OF THE PRINCIPAL AVENUES IN OKLAHOMA CITY, OKLA., TAKEN IN MAY, 1911.

The 150-mesh screen of the half-tone plate has greatly diminished the glare of the reflection of sunlight shown in the original photograph, which is very trying to the eyes. Reflection of heat is equally strong.

It is for the interest of the whole cement industry that an item of such importance as pavements, already consuming vast quantities of cement, and destined to be, perhaps, the largest consumer, should have this coloring defect rectified when it can be so simply and easily done at an insignificant cost. The defect is already being taken advantage of by the promoters of brick and other paving materials, which are less objectionable in this particular, and every manufacturer and seller of cement should conduct a campaign of education along this line by sending out to everyone of his customers a specification for coloring the wearing surface of concrete pavements, and explaining the advantage of so doing.

The cost is insignificant. From one to two pounds of Lampblack to each barrel of cement, depending upon the depth of shade required, is all that is necessary. This black is sifted from the top of the package across the mortar bed in mixing, and then mixed into the mass until it is uniform, or is mixed with the sand beforehand. The coloring power of Lampblack is so great that this quantity thoroughly

stains the mix and does not weaken the bond. This, of course, does not apply when other coloring materials are used, because reds, browns, and other pigments, are so much weaker in coloring power that very large quantities have to be used to get a good color, and then the bond is weakened and the pavement goes to pieces. This is also true when weak imitations of Lampblack are used. Many of these are sold under the name of Bluestone or Sidewalk Black, and they are nothing but various forms of charcoal, or in some cases ground coal, or Lampblacks heavily adulterated with these or similar minerals, and some Lampblack manufacturers are unwise enough to sell these substitutes. Their coloring power is very slight, and they are dangerous to use. Therefore, nothing but pure Lampblack should be employed, and in this case it happens that the best is the cheapest, because pure Lampblack has such great coloring power that it will give the required shade at less expense than cheap goods, which have to be used in such large quantities in order to produce the shade.



FIG. 2—PHOTOGRAPH TAKEN AT CORNER OF PIKE'S PEAK AVENUE, COLORADO SPRINGS, COLO., IN DECEMBER.

But for the shading effect of the half-tone screen, the glare of the reflected sunlight would be much more striking. Many cities and towns now have ordinances requiring that the surface mix of concrete pavements shall be darkened with lampblack to prevent reflection of light and heat.

These so-called "cheap" blacks have about one-eighth the strength of pure Lampblack, so that they actually are a great deal more expensive per square foot of pavement. For example, if this "cheap" black is sold for say 2½¢ a pound a Lampblack, being eight times as strong, is worth 20¢ per pound in actual coloring value, to say nothing of the fact that it does not weaken the mix and gives a durable color. It really seems absurd that manufacturers of these so-called "cheap" blacks should be able to put up ground coal and persuade dealers and others to buy it and pay freight on it when, if they would stop to consider the real economy, they would find it a great deal more expensive than pure Lampblack.

Another important item is to get a Lampblack that is as free as possible from grease. Many Lampblacks that are otherwise pure contain so much grease as to make it very difficult to amalgamate with a watery mixture like concrete.

The cost of this operation is so slight that the contractors do not object to it and are not seriously tempted to evade or oppose the specifications. It is a reform that is of great interest to the cement industry, and a great advantage to the communities in which the pavements are used, and when it can be accomplished at such a slight cost it should become universally adopted as a matter of course. It is one of those simple things which frequently make or break the success of an important movement.





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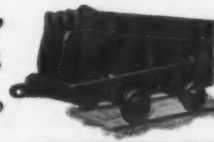
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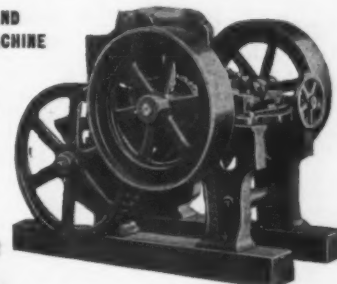
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Austin Mfg. Co. .... 9	Dull & Co., Raymond W. .... 71	Lewisport Fdy. & Mch. Co. .... 70	Phoenix Portland Cement Co. .... 1	United States Gypsum Co. .... 77
Automatic Weighing Machine Co. .... 73	Dunn, W. E., Mfg. Co. .... 81	Link Belt Co. .... 69	Plymouth Gypsum Co., The. .... 78	United Wire Tire Co., The. .... 16
Bacon, C. Earle. .... 11	DuPont Powder Co. .... 17	Louisville Fire Brick Works. .... 67	Raymond Bros. Impact. Pul. Co., The. .... 15	Universal Portland Cement Co. .... 43
Barrett Mfg. Co. .... 65	Ehram, J. B., & Sons, Mfg. Co. .... 74	McDonnell Boiler and Iron Works. .... 72	Read & Morrill, Inc. .... 82	Urschel Bates Valve Bag Co. .... 73
Bartlett, C. O., & Snow Co. .... 60	Farnham Cheshire Lime Co. .... 16	McLanahan Stone Mch. Co. .... 70	Reeb, M. A. .... 76	Wadsworth-Howland Co. .... 66
Beckley Perforating Co. .... 70	Farrell Fdy. Mch. Co. .... 11	Macneal, Jas. B., & Co. .... 61	Richardson Mineral Paint Wks. .... 72	Webster Mfg. Co. .... 68
Belt, C. T. .... 62	Fisher Hyd. Mch. Co. .... 79	Marblehead Lime Co. .... 13	Ricketson Portland Cement Co. .... 42	West Jersey Bag Co. .... 41
Bonnell, John Harper. .... 42	Fowler & Pay. .... 82	Marsh Co. .... 63	Rock Plaster Mfg. Co. .... 42	Whitehall Portland Cement Mfg. Co. .... 42
Bonnot Co., The. .... 10	Francis Mch. Co. .... 62	Martin, Henry, Brick Machine Mfg. Co. .... 63	Ruggles-Coles Eng. Co. .... 17	Williams, C. K., & Co. .... 61
Books for the Trade. .... 61	French, Samuel H., & Co. .... 1	Maumee Chemical Co. .... 44	Sandusky Portland Cement Co. .... 18	Williams Patent Crusher and Pulverizer Co. .... 6-11
Bradley Pulv. Co. .... 4	Fuller Eng. Co. .... 60	Meacham & Wright. .... 42	Scioto Lime & Stone Co. .... 13	Wolverine Portland Cement Co. .... 2
Buckbee, J. C., Co. .... 68	Gandy Belting Co., The. .... 68	Miller, W. D. .... 60	Schott, Dr. Otto. .... 62	Worrell, S. E. .... 18
Buffalo Wire Works Co. .... 68	Gardner Crusher Co., The. .... 8	Miller, Clifford L., & Co. .... 12	Security Cement & Lime Co. .... 41	Wolfe & Misner. .... 78
Buhler, Edw. E., Co. .... 79	Good Roads Construction Co. .... 62	Miscampbell, H. .... 16	Shaw, Willis, Machinery Co. .... 62	Yates, Preston K. .... 62
Butterworth & Lowe. .... 72	Howells Mining Drill Co. .... 71		Sioux City Cement Machinery Co. .... 81	York Hotel. .... 67
Cabot, Samuel, Inc. .... 63	Houston Bros. Co. .... 42			
Caldwell, H. W., & Son Co. .... 69	Hunt, Robt. W., Co. .... 42			
Canada Cement Co. .... 2				
Carolina Portland Cement Co. .... 1				
Century Cement Mach. Co. .... 82				
Chalmers & Williams. .... 8				

# CLASSIFIED BUSINESS DIRECTORY

## BAGS.

Urschel Bates Valve Bag Co.  
West Jersey Bag Co., The

## BAG TYERS.

Miller & Co., Clifford L.  
United Wire Tie Co.

## BAG PRINTERS.

Kochler Co., Hy. L.

## BELTING.

American Fabric Belting Co.  
Chicago Belting Co.  
Gandy Belting Co.  
Link-Belt Co.  
Stephens-Adamsen Mfg. Co.  
Webster Mfg. Company.

## BUCKETS, DUMPING AND GRAB.

Atlas Car & Mfg. Co.  
Kilbourne & Jacobs Mfg. Co.

## CEMENT BRICK MOHY.

Bartlett, C. O., & Snow Co.  
Martin-Henry Brick Machine Mfg. Co.

## CEMENT HYDRAULIC.

Carolina Portland Cement Co.  
Fowler & Pay.

## CEMENT MOHY.

Allis-Chalmers Co.  
American Pulverizer Co.  
Bonnot Co., The.  
Bradley Pulverizer Co.  
Cummer, F. D., & Son Co.  
Jeffrey Manufacturing Co.  
Kent Mill Co.  
Miscampbell, H.  
Raymond Bros. Impact Pulverizing Co.  
Ruggles-Coles Eng. Co.  
Smith & Co., F. L.

## CEMENT, PORTLAND.

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Alpha Portland Cement Co.  
Atlas Portland Cement Co.  
Canada Cement Co.  
Carolina Portland Cement Co.  
Chicago Portland Cement Co.  
Coplay Cement Mfg. Co.  
Dexter Portland Cement Co.  
French, Samuel H., & Co.  
Hartman, Wm. G., Cement Co.  
Kansas City Portland Cement Co.  
Knickerbocker Portland Cement Co.  
Ironton Portland Cement Co.  
Lehigh Portland Cement Co.  
Meacham & Wright Co.  
Northwestern States Portland Cement Co.  
Phoenix Portland Cement Co.  
Sandusky Portland Cement Co.  
St. Louis Portland Cement Works.  
Security Cement & Lime Co.  
Standard Portland Cement Co.  
Union Sand & Material Co.  
Universal Portland Cement Co.  
Whitehall Portland Cement Mfg. Co.  
Wolverine Portland Cement Co.

## CHAINS.

Taylor Iron & Steel Co.

## CLAY PRODUCTS.

Improved Equipment Co.  
Louisville Fire Brick Co.  
Union Mining Co.

## CLAYWORKING MOHY.

American Clay Working Mch. Co.  
Bartlett, C. O., & Snow Co.  
Cummer, F. D., & Son Co.

## CONCRETE AGGREGATES.

Bonnell Iris Aggregate.

## COMBUSTION ENGINEERS.

Improved Equipment Co.  
Northwestern Steel & Iron Works.

## CONCRETE BLOCK MOHY.

Anchor Concrete Stone Co.  
Century Cement Mch. Co.  
Chicago Structural Tile Co.  
Dunn Mfg. Co., W. E.  
Fisher Hydraulic Stone & Machinery Co.  
Francis Machinery Co.  
Northwestern Steel & Iron Works.  
Pettyjohn, The, Co.  
Sioux City Cement Mch. Co.

## CONCRETE BRICK MACHINERY.

Peerless Brick Mach. Co.  
Northwestern Steel & Iron Works.

## CONCRETE MOLDS AND FORMS.

Dunn Mfg. Co., W. E.  
Northwestern Steel & Iron Works.  
Read & Morrill, Inc.  
Ubbink Steel Frame Co.

## CONCRETE MIXERS.

Chalmers & Williams.  
Dunn Mfg. Co., W. E.  
Kent Mach. Co.

Miscampbell, H.  
Northwestern Steel & Iron Works.  
Standard Scale & Supply Co.

## COLORINGS, BRICK AND MORTAR

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Clinton Metairie Paint Co.  
Macneal, James B., & Co.  
Ricketson Mineral Paint Works.  
Williams, C. K., & Co.

## CONCRETE REINFORCEMENT.

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## CONVEYORS.

Allis-Chalmers Co.  
American Fabric Belting Co.  
Austin Mfg. Co.  
Bartlett, C. O., & Snow Co.  
Caldwell, H. W., & Sons Co.  
Cross Engineering Co.  
Dull, Raymond W., & Co.  
Ersham, J. B., & Sons Mfg. Co.  
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Jeffrey Manufacturing Co.  
Link-Belt Co.  
McLanahan Stone Machine Co.  
Stephens-Adamsen Mfg. Co.  
Webster Mfg. Company.

## CRUSHERS.

Allen Edgar American Manganese Steel Co.  
Allis-Chalmers Co.  
American Pulverizer Co.  
Austin Mfg. Co.  
Bacon, Earl C.  
Bartlett, C. O., & Snow Co.  
Bonnot Co., The.  
Bradley Pulverizer Co.  
Butterworth & Lowe.  
Chalmers & Williams.  
Chrome Steel Works.  
Ehrsam, J. B., & Sons Mfg. Co.  
Gardner Crusher Co., The.  
Jeffrey Manufacturing Co.  
Kent Mill Co.  
Lewistown Foundry & Machine Co.  
Marsh Co.  
Martin, Henry.  
McDonnell Boiler & Iron Works.  
McLanahan Stone Machine Co.  
Pennsylvania Crusher Co.  
Smith, T. L., & Co.  
Symons Brothers.  
Sturtevant Mill Co.  
Taylor Iron & Steel Co.  
Williams Pat. Crusher & Pulverizer Co.

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Ruggles-Coles Eng. Co.  
Worrell, S. E.

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Sackett Screen & Chute Co., H. B.

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Kent Mill Co.  
Pennsylvania Crusher Co.  
Raymond Bros. Impact Pulverizer Co.  
Sturtevant Mill Co.  
Williams Pat. Crusher & Pulverizer Co.

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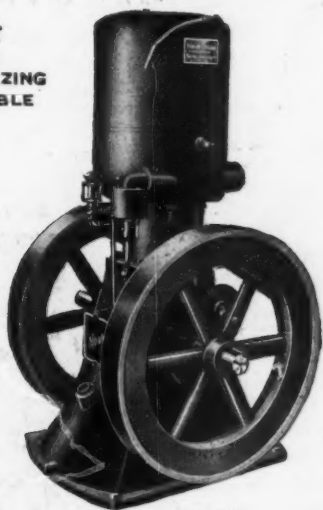
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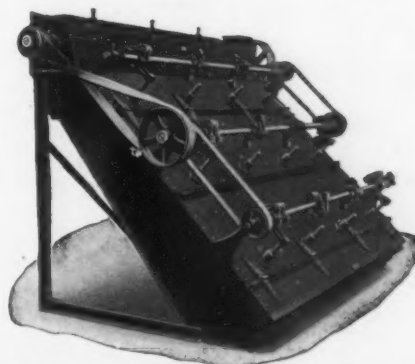
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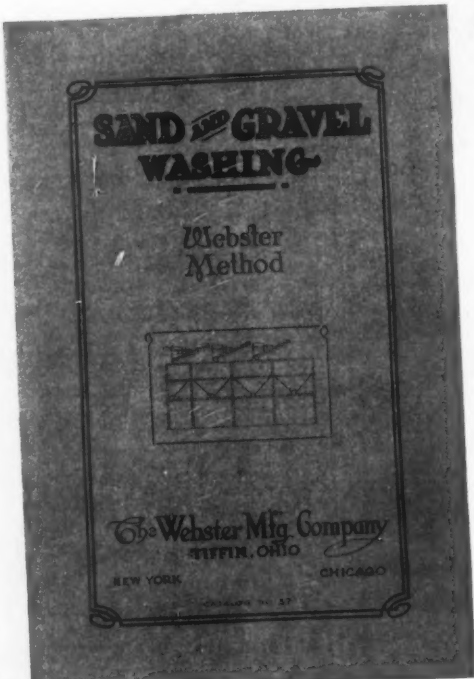
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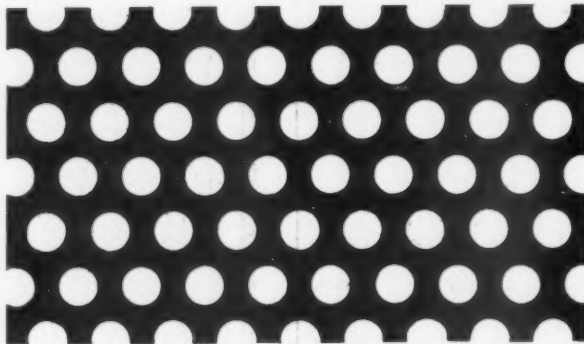
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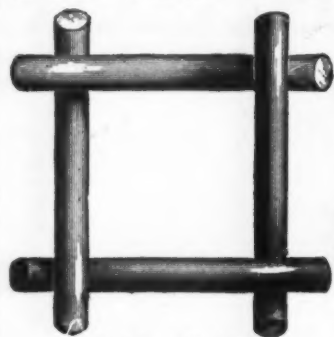
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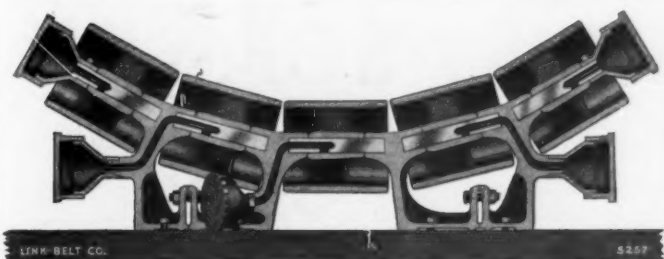
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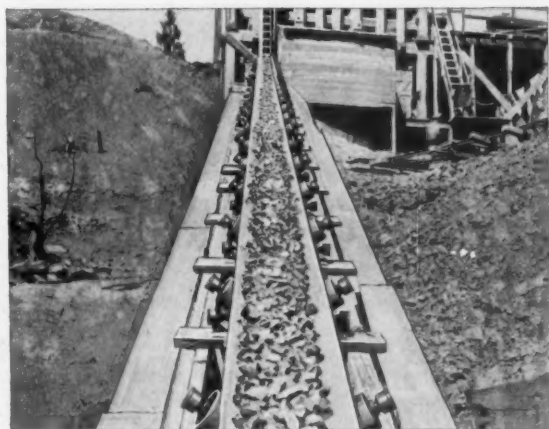




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We have manufactured and installed Belt Conveyors for purposes for which they were suitable for upwards of 20 years, and are furnishing the most efficient and durable equipment today



"Link-Belt" Belt Conveyor Delivering Crushed Rock from Quarry to Continuous Bucket Elevator

### "Link-Belt" Equipment Includes

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Screens—All Types Skip Hoists

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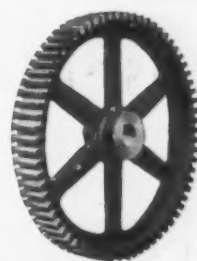
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Address nearest office

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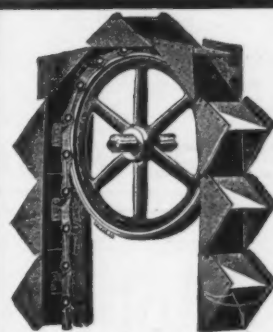
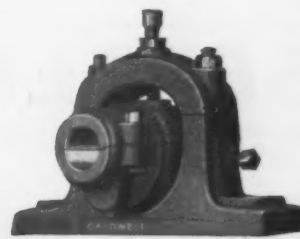
## ELEVATING AND CONVEYING MACHINERY



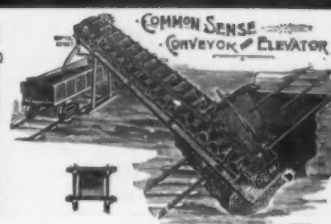
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So. Bethlehem, Pennsylvania,

have been using one of our Common Sense Elevators for six years—  
capacity 400 tons an hour.

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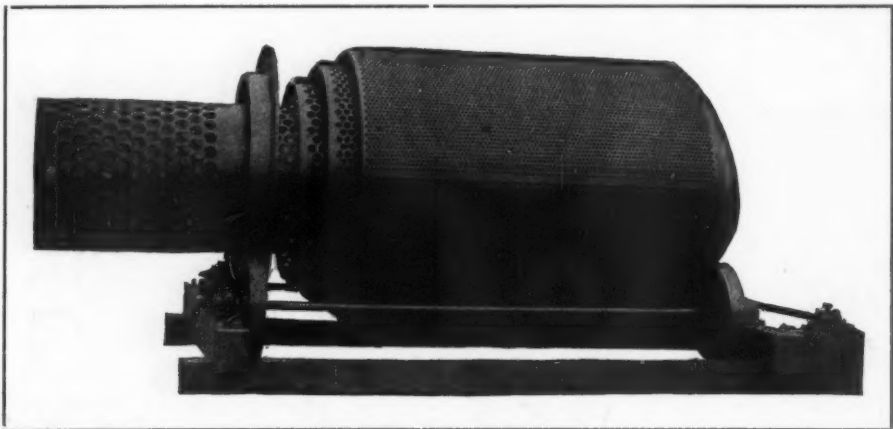
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Cement, Hydrated Lime and Gypsum Plants a Specialty

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# JOHN O'LAUGHLIN'S SCREEN



made solely by Johnston & Chapman, is the

## ONLY SCREEN

on the market for wide-awake quarry-men and miners, who want to separate crushed granite, limestone or other minerals, gravel, sand, coal or coke. It will soon earn its cost in saving of repairs, and maintenance, and reduced power, and will do more and cleaner work than any other cylindrical screen of like area. No one can afford to keep old traps in use when the O'Laughlin installed

## NOW

will from the moment it starts give a better and larger product, and a big interest on your investment in continuous saving in cost of repairs, renewals, and power. For particulars address:

The advantages of these screens are described in detail in a circular which WE WILL MAIL TO ANY ADDRESS. Mr. John O'Laughlin, the inventor, has designed many notable improvements in rock-drilling, quarrying, crushing and screening machinery, and uses these improved screens in his own crushing plants, which others have declared "to be the most perfect in existence in every detail." The O'Laughlin Screen is an important factor in the most modern and perfect stone-crushing plant.

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Perforators of Sheet Metals, Flat, Cylindrical, and Conical Perforated Screen Plates for Quarries, Mines, Reduction Works, Mills and all Industrial Purposes.

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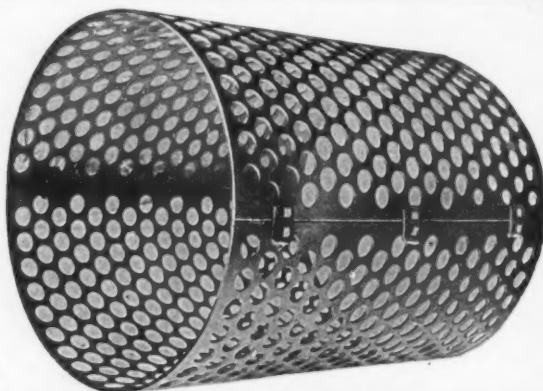
### Perforated Screens

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**Have Tried All the Rest,  
Why Not Try the Best?**

Let us supply you with our screens, which are made from a special Hard Steel, especially adapted for stone, ore, gravel, sand, etc.

**We Solicit  
Your Inquiries**



**IT WILL PAY YOU TO INVESTIGATE**

**PRICE, MATERIAL and  
DELIVERIES Are Right**

Revolving Screens, Suspension Screens  
Trunion Screens, Shaker Screens  
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If you don't see the screen you are looking for here, ask for it. We make it.

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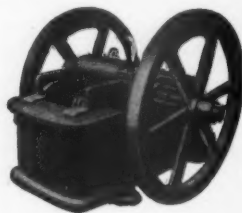
For Limestone, Phosphate Rock, Cinder, Etc.

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More easily fed and makes less fines than either a jaw or gyratory crusher. Information and prices for the asking.

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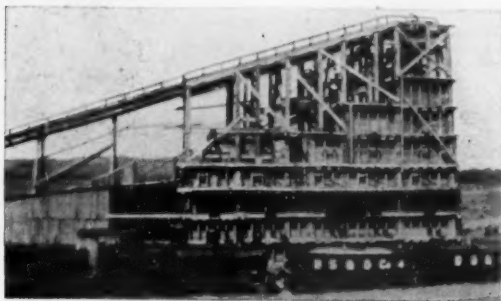


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**WE MADE GOOD ON ALL**

Stone Crushing Plants  
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*We can possibly refer you to others in your vicinity—Write us.*

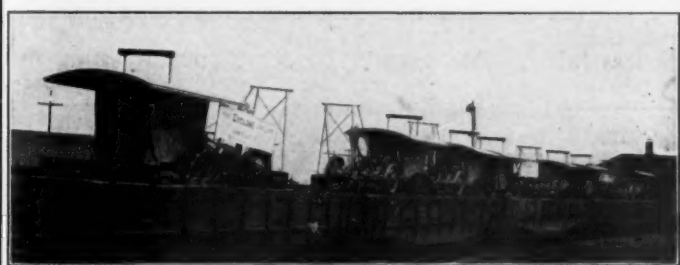
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Than a Plant Equipped with the Improved Conical Quick-Change Washing Screens, Handy, Efficient, Reliable and the Belt Conveyors with Indestructible Heavy Steel Idler Pulleys, and Separating Boxes which Automatically take the Sand from the Muddy Water?

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**W**HEN you hear Big Drill and Quarry mentioned together, it means a Cyclone Drill—they are one and the same thing; it is the machine that is effecting a saving of from 25 to 75% in producing stone.

The largest quarry installation in the United States, the largest in Canada and the largest in Europe is made up of Cyclones. There's a reason—would you like to know it?

Suppose we send you, say, twenty letters from men who have installed these drills and tell in these letters about the savings effected in their various quarries; would they interest you? Shall we send them? They may tell you something which will start dollars rolling your way.

Just remember that you are competing against the other fellow's cheaper production. Do you recognize the man who is really paying for the modern equipment?

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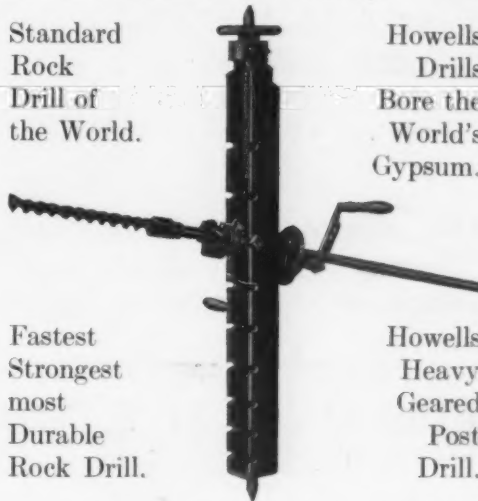
for all purposes where drills are required. Combine efficiency and economy.

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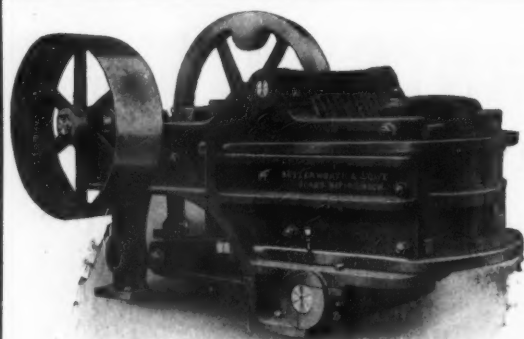
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These drills have a record—can't be beat. Will drill from five to seven inches per minute in gypsum or soft rock.

*We make over 40 different kinds of Auger Drills, operated by Hand, Electricity and Air.*

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Nippers—17 x 19", 18 x 26", 20 x 30" and 24 x 36".

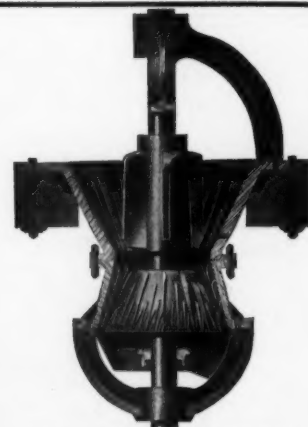
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For all Rocks and Ores Softer than Granite

GYPSUM MACHINERY—We design modern Plaster Mills and make all necessary Machinery, including Kettles, Nippers, Crackers, Buhrs, Screens, Elevators, Shafting, etc.

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Crackers—5 sizes—many variations.

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Buffalo Branch, CHAS. C. CALKINS, Manager  
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Not the hardest, but the toughest and best Wall Plaster made—Can be applied with less labor. Has greater covering capacity than any other similar material

**J. B. KING & CO., 17 State Street, New York.**

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Manufacturer of any kind of  
Machinery, Equipment or Supplies.

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There's one "best" in every line, but that is not always best for everyone concerned. In the building trades

## Ricketson's Mineral COLORS

are acknowledged to be the best choice for everybody. Best for the architect because purest. Best for the contractor because they go farther. Best for the owner because they never change their color.

For Mortar, Brick, Cement, Stone, Etc.  
Red, Brown, Buff, Purple and Black

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## THE VALVE BAG

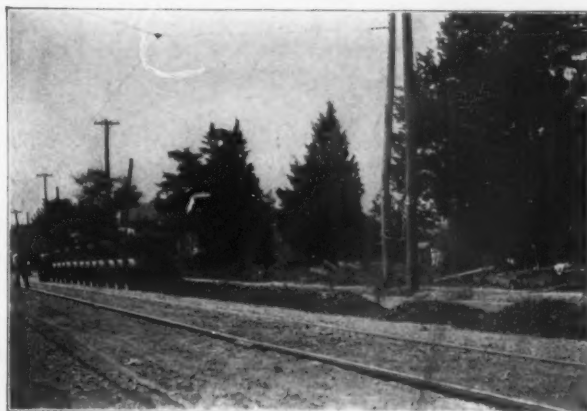
The neatest and best package for handling your *cement, lime, plaster, alca, ground stone, etc.*

## THE VALVE BAGGER

A device unequalled for sacking these products. *Your inquiries will have our prompt attention.*

The  
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A TRAIN OF TROYS AT ATLANTIC CITY

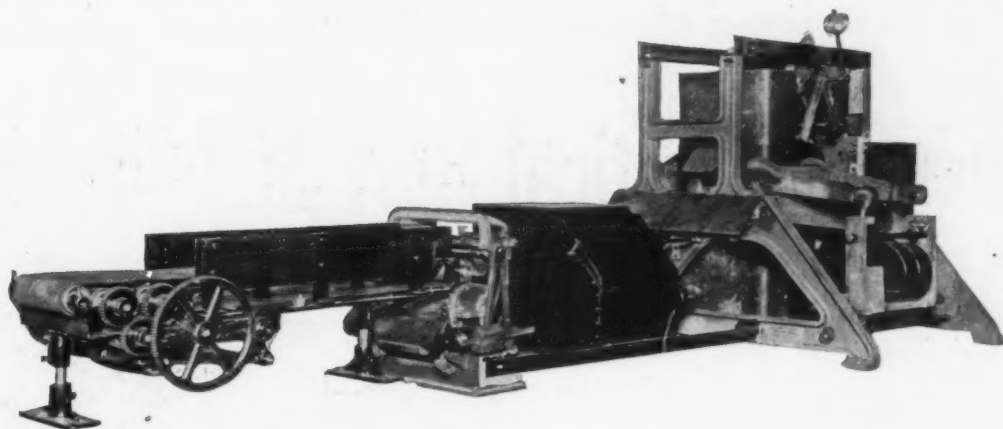
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Write us a note like this. We'll send you the answer from Texas and New Jersey; from Michigan and Mississippi—in fact, from every part of this country and Canada.

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Cement of the highest quality is only made by the exact required proportions of

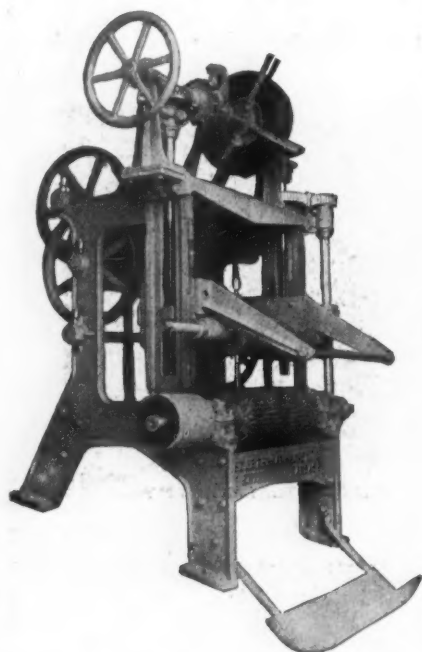
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Your chemist, with this machine, will give the desired result

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## Points of Interest Concerning The Ehram Wood Fibre Machine

The log feeds itself to the saw. As the log decreases in diameter the Speed of the log and of the feed **INCREASES AUTOMATICALLY**.

In other words, the Peripheral Speed remains constant.

The feed of the log to the saw is in direct proportion to the speed of the log. This automatic uniformity of feed **INSURES UNIFORMITY** of **FINE-NESS** in the **PRODUCT**.

No frictional devices are used, none being necessary.

All the working parts are planed. All of the gears are cut from solid steel. All of the parts are interchangeable and numbered, so that duplicate parts can be quickly obtained and easily put in position.

The Saw mandril is extra heavy and made of the best crucible steel.

The journals are chain oiling. No machine can be more substantially built. Write for full information.

J. B. Ehram & Sons, Enterprise, Kans.,

Gentlemen:—Some time ago I received a letter from you asking how the wood fibre machine you shipped us is doing. Will say it is the best I ever used. In regard to any suggestions I could make as to how it might be improved, will say that I can make none, as it is O. K.

Yours truly,

SOUTHWEST CEMENT PLASTER CO.,

Okeene, Okla., June 14, 1911.

Frank Dodge, Sup't.

Manufacturers of Jaw and Rotary Crushers for Gypsum, Vibrating Screens,  
Hair Pickers, Wood Fibre Machines, Calcining Kettles,  
Plaster Mixers, Power Transmission

## The Enterprise Vertical Burr Mill

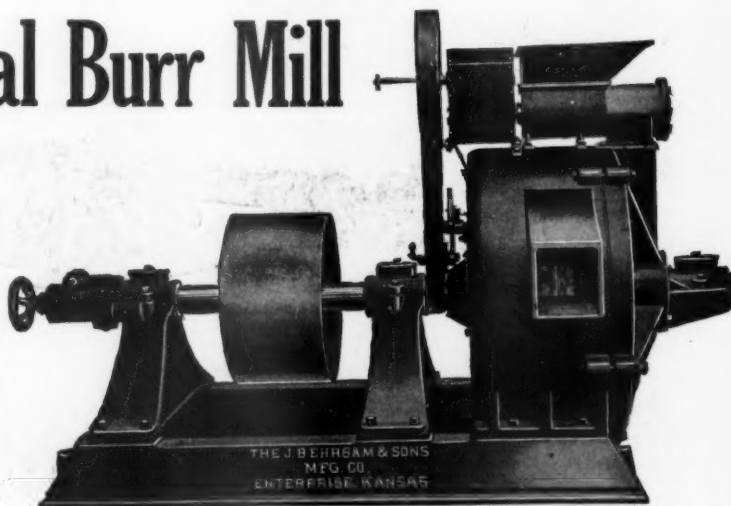
is especially designed for grinding gypsum, limestone, coal, coke, paint, rock, foundry facing, carbon, salt, and other similar substances.

It is **STRONG** and **DURABLY** built.

Has **INTERCHANGEABLE STONES**, which can be easily removed for dressing and replaced.

Is provided with our **POSITIVE CONTROLLABLE FEEDER**, which feeds an absolutely uniform stream into the mill at the required capacity.

**MANY OTHER  
ADVANTAGES.**



## The J. B. Ehram & Sons Mfg. Co.

Designers and Builders of

Complete Equipment for Plaster Mills

**ENTERPRISE, KANSAS, U. S. A.**

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Improved  
Modern  
Lath



Fire-Proof  
Insulating  
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# King's Fibrous Plaster Board

Standard Size 32' x 36'

THE RESULT OF "TRADE DEMANDS"

STRENGTHENED to stand the GREATEST STRAIN to which such material is subjected  
TOUGHENED to a woody consistency to stand NAILING AND HANDLING

SHIPMENTS made to dealers of STRAIGHT OR MIXED CAR LOADS

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**SERVICE** The location of our works at the greatest railroad terminus in the East and our several warehouses enable us to make **Prompt Shipments at all times.**

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## Peerless Plaster-Board

The Best on the Market To-day

Peerless Plaster Board has no superior on the market today. Strength, durability, and uniformity in thickness with clean cut edges are its chief virtues.

Peerless Plaster Board finished with Peerless Plaster make a Peerless Wall. Builders' Supply Retailers say it is the best Plaster Board manufactured. If you are "from Missouri" write us today for sample and prices.

Write today for our  
PEERLESS PROPOSITION



Peerless Cement Plaster  
Peerless Wood Fibre Plaster  
Peerless Sanded Plaster  
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Peerless Portland Stucco  
(Exterior Plastering)

We Ship Mixed Cars  
of Plaster and Board

Peerless Plaster Board comes in sheets 32 inches by 36 inches.

Peerless Plaster Board is a fire retardant and an efficient sound deadener.

Peerless Plaster Board is a non-conductor of heat and cold.

Peerless Plaster Board is an insurance against cracks, buckles, and lath stains.

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M. A. REEB, : Buffalo, New York

# THE NATIONAL RETARDER CO.

Mills at

Webster City, Iowa  
Port Clinton, Ohio

Successors to

The Chemical Stucco Retarder Co.

Webster City, Iowa

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The Binns Stucco Retarder Co.

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The same standard quality of retarder will be produced and marketed by the same people at the right price—only a change in name of corporation.

MAIL ORDER TO NEAREST MILL FOR PROMPT SERVICE

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# SACKETT PLASTER BOARD

is a product of a progressive age, and offers you an *unusual opportunity* to make yourself stronger with your trade. Sackett is the logical successor of wood and metal lath—it enables you to give your customers better value for their money.

¶ The enormous increase in the use of Sackett throughout the country attests its popularity. Sackett sales are growing by “leaps and bounds”—is rapidly becoming the “National Lathing Material” because of its superior merits.

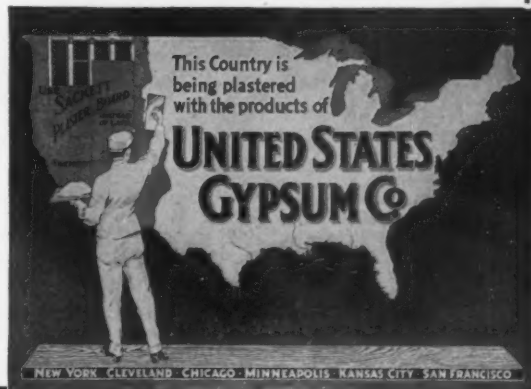
¶ Sackett is easily introduced in any market—and has great possibilities *in your market*. If you are not handling this “twin commodity” of U. S. G. Wall Plaster, make a “ten strike” by adding this trade-winning, profit-making utility to your line at once.

¶ Join hands with us—let us help you make 1912 your banner year.

There never was a better time than right now to find out how well and profitably we can serve you.



U. S. G. Products and Methods will increase your business and profits and enable you to give greater satisfaction to your trade.



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Wall Plasters Have Greater Covering Capacity, Work Smoother Under the Trowel and Have Greater Final Strength

**Niagara Neat Cement**

**Niagara Sanded Mortar**

**Niagara Wood Fiber (Wood Pulp)**

in 100-lb. Jute Sacks and 80-lb. Rope Paper Sacks. Mixed Car Loads of Wall Plasters, Hydrated Finishing Lime, Plaster Board, Land Plaster and Calcined Plaster for Finishing Purposes. These Products Mean Money to the Dealers in Builders' Supplies. Write today for prices.

**NIAGARA GYPSUM COMPANY**  
**BUFFALO, NEW YORK**

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WE MAKE THE FAMOUS

**"Black Hawk"**

AND

**"Dacotah"**

**Hair and Wood Fibred Plaster**

Our Plaster is pure white; uniform in color; carries more sand, works easier and makes the hardest wall. Our Mill is thoroughly equipped with the most modern machinery, and we are always in a position to make prompt shipment. We guarantee every sack of our plaster.

**Dakota Plaster Co.** Rapid City, S. D.  
Black Hawk, S. D.

CUMMER CONTINUOUS PROCESS

FOR

**CALCINING  
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NO KETTLES  
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PLANTS IN  
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Great Saving in Cost of Manufacture and Quality of  
Product Guaranteed.

The F. D. CUMMER & SON CO., Cleveland, O.

## THE STUCCO THAT STICKS

Most architects and builders have had trouble with stucco work cracking and peeling off. They have also found it difficult to get a uniform color that will last. The solution of these troubles is the use of

**"ORIENTAL" STUCCO**

MADE IN ALL COLORS

**ALSO BASE COAT**

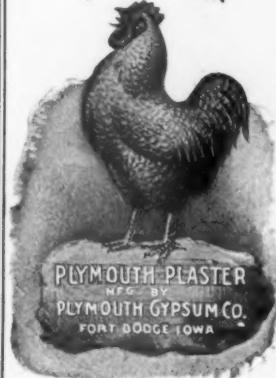
Prepared stucco, shipped anywhere. Just add water and it's ready to apply. Remember: Oriental Stucco is slow setting, bonds perfectly and will not peel off. Its color is permanent. Superior to cement and sand stucco. Also manufacturers of interior colored finish. Write for catalog and color card.

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**PLYMOUTH PLASTER  
WOOD FIBER PLASTER  
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PLASTER BOARD  
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THE QUALITY BRANDS

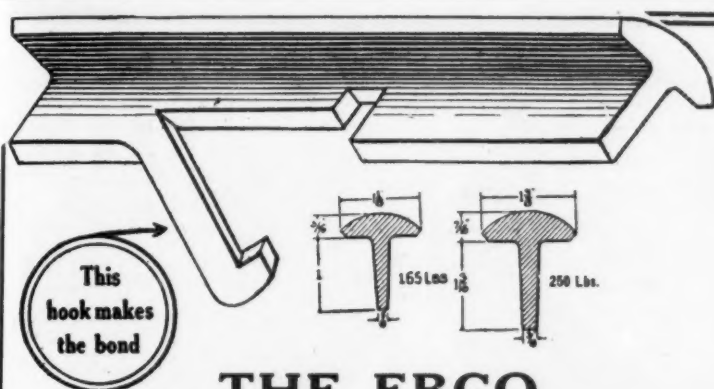
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ADVERTISING MATTER

**Plymouth Gypsum Co.**

Fort Dodge, Iowa

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## THE EBCO HOOK CURB BAR

is a steel member to be embedded when the concrete is poured, forming a permanent protecting edge and acting as a re-inforcing member as well.

These bars have shear members which bond perfectly with the concrete. Rolled in straight lengths and in curves for street corners.

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Factory: Pittsburgh, Pa.

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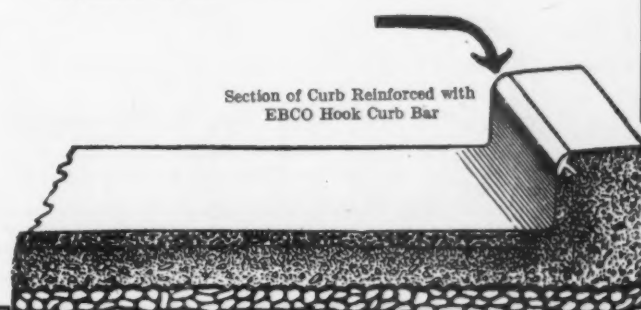
Louisiana Agents: Standard Paving & Construction Co., 321 Godchaux Bldg., New Orleans, La.

Akron and Canton Agent: Fred Fogarty, Akron, O.

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City engineers and contractors who have had trouble with the old sand-stone curbs or with plain concrete curbing, realize the need of a curb whose corner is properly protected against wear.



When you have looked  
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**ROCK PRODUCTS**

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find what you want  
drop a line to

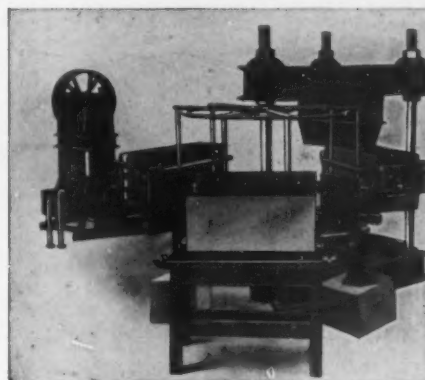
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## CHEER UP!

YOUR TROUBLES WITH WATER SOAKING BLOCKS ARE PAST

We guarantee to make Strong Dense Non-absorbent Concrete Blocks cheaper and better than any Concrete Building Product you have ever seen made



### WHY?

BECAUSE we ram a wet mixed Concrete by powerful Hydraulic blows. We supply the Cement at the time of mixing with sufficient water to produce perfect initial setting and the aggregates driven together held by suction permit perfect bonding. We follow these principles.

THIS MACHINE DOES THE WORK. WE LEAD, OTHERS FOLLOW. WE BUILD YOUR BUSINESS AND MAKE YOU MONEY. WE EQUIP YOUR PLANT WITH MACHINERY AND ALL THE ATTACHMENTS COMPLETE.

Our Machine makes 1000 blocks per day under powerful Hydraulic ramming of a wet mixed Concrete. No skill labor required. Two men make more blocks with our system, than four men using any other machine.

We make any style and shape blocks—and don't be misled for we make hollow block-angle blocks—veneering slabs face down in any design from the size of a brick up to the dimension stone.

We guarantee the machinery and sell it on its merits.

Before purchasing write us—or better still come and see and be convinced.

THE FISHER HYDRAULIC RAMMING MACHINERY

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::

Rockford, Ill.

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## Anchor Automatic Tamper

This great labor saving machine does not require any room in your factory except the space directly above the mold box. It is suspended from heavy frame work on the ceiling. Can be adjusted to fit any machine or used for all kinds of special work. The eight tampers are raised by roller crank-arms and each tamper strikes the concrete 75 times per minute. Better look into this little wonder.



## Anchor Block Machines

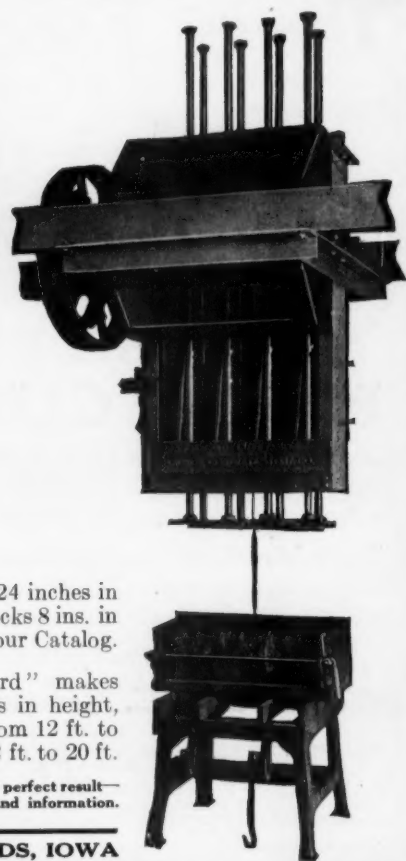
Made in two sizes. Our "Standard" makes blocks that lay in the wall 8 inches in height, and 24 inches in length, of any width, such as 8, 9, 10, 11 and 12 inches, five sets of face plates. Our "Junior" makes blocks 8 ins. in height and 16 ins. in length, of any width such as 8, 9, 10, 11 and 12 ins., four sets of face plates. Get our Catalog.

## Anchor Adjustable Silo Block Machines

Made in two sizes. The "Standard" makes blocks that lay in the wall 8 inches in height, 24 inches in length, of any circle from 12 ft. to 20 ft. The "Junior" makes blocks 8 inches in height, 16 inches in length, making any circle from 12 ft. to 20 ft.

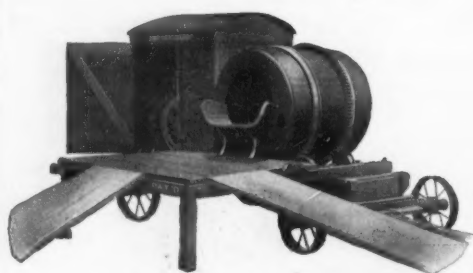
Continuous Air Space is the principle upon which lies the prestige of Anchor Concrete Blocks and Silo Blocks. They are giving the only perfect result—a dry inner wall, impregnable to heat, cold or moisture. Investigate this system of block construction by sending for our catalogue and information.

**Anchor Concrete Stone Company** ROCK RAPIDS, IOWA



## "The Standard" Low Charging Concrete Mixer

In addition to our regular low charging mixers, we also have special designs for peculiar requirements, such as:



"THE STANDARD" Low Charging Mixer with belt drive.

"THE STANDARD" Low Charging Mixer with cart charging arrangement.

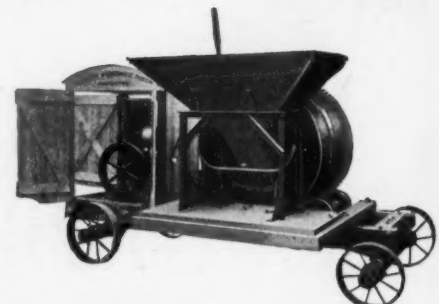
The Eclipse Stone or Block Machine.

The Perfect Brick Machine.  
Gas and Gasoline Engines.



"THE STANDARD" Low Charging Mixer with Folding Platform.

(Shown in illustration Platform down in mixing position.)



"THE STANDARD" Low Charging Mixer with discharging trough for street work.

"THE STANDARD" Low Charging Mixer with hoist for mixed concrete.

"THE STANDARD" Low Charging Mixer with removable Charging Hopper.

"The Standard" Hoists and Elevators.  
Steam Engines and Boilers.



Ask for catalogue No. 33. The information in this catalogue will be of value to you.

## The Standard Scale & Supply Co.

CHICAGO, 1345-1347 Wabash Ave.  
PHILADELPHIA, 35 South Fourth St.

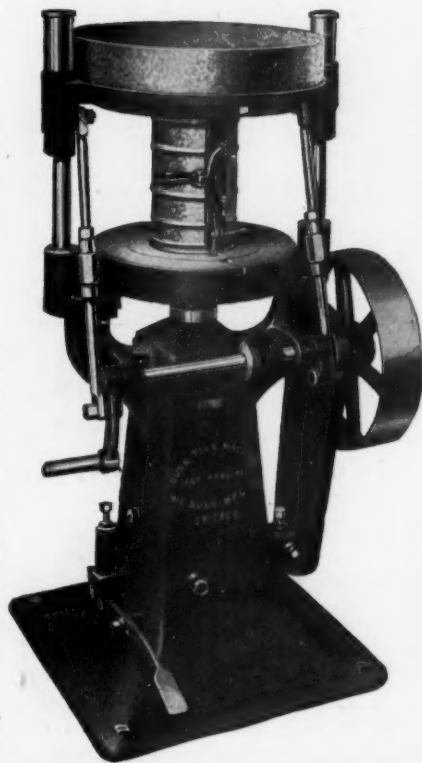
PITTSBURGH, 243-245 Water St.  
NEW YORK, 136 West Broadway

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## 100% Profit With Unlimited Future



No other business today offers the possibilities for money invested as the manufacture of cement drain tile and sewer pipe.

### No Tamping

With this machine—just throw in the concrete, trip the foot lever and the machine packs the tile with equal density at both ends.

**Dunn Cement Drain Tile Machine** requires no large investment, but has a capacity of 2,000 tile per day. The only compact machine where all shafts, bearings and gears are enclosed in a dust-proof base, insuring long life with continuous service.

### No Tamping

With these molds—just make the mixture wet enough to pour. Absolutely no tamping, but the product is far superior to the semi-dry tamped method.

**Dunn Poured Sewer Pipe Molds** save labor, save cement, and produce a better and more uniform product at a lower cost.

Our price on a complete outfit of six molds is about the same as others charge for a single mold.

### Shipped on 15 Days' Free Trial

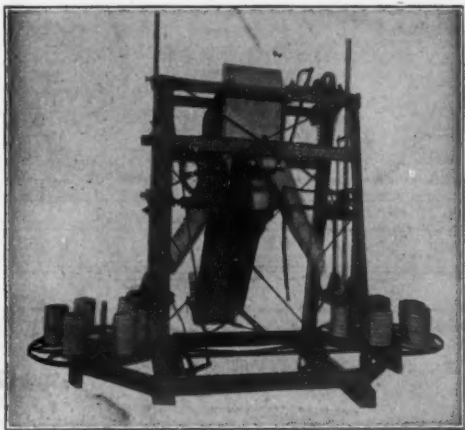
You operate them in your own home town before you accept them. That's a safe way for you to buy. We take chances of them making good.

**Send for 64 page Catalogue.** It tells all about this business. The cost of making tile and the profits. It shows a small plant that makes \$24.00 a day profit. Send for one right now. A postal will do.

**W. E. DUNN MFG. CO.**  
4130 Fillmore Street, : : CHICAGO



## THE McCracken Double Tile Machine



The McCracken Double Tile Machine makes all sizes of cement tile from 4 to 16 in. in diameter at the rate of from 10 to 20 tile per minute. Also makes building blocks or construction tile 8x8x16 at the rate of 2000 to 3000 per ten hour day.

The machine will make two different sizes of tile at the same time or building blocks and tile at the same time, or either end of machine can be used without using the other.

The machine has no cans and runs just as smooth at high speed as when running slow. Takes less labor per 1000 tile than any other machine.

Tile are packed so hard that the large sizes can be carried without the use of pallets. Machine is very simple and strong and runs very light, and elevator can be started and stopped without stopping the machine.

See the McCracken Machine before you buy. Write to

**The Sioux City Cement Machinery Company**  
219 4th Street, SIOUX CITY, IOWA

## Peerless Cement Brick Machine

Equip yourself *now* with **The Peerless**—the original hand power brick machine with automatic Tampers.

Makes brick face-down and delivers them face-up. One man operation.

Large variety of face plates with machine.



CAPACITY, 12,000 PER DAY.

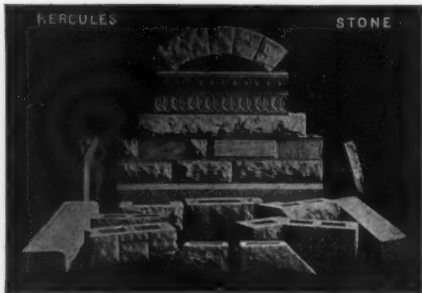
Cement is at the lowest price ever known. Buy the machine that will make money for you. Write for catalogue and booklet on cement brick

**Peerless Brick Machine Co.**  
18 NORTH SIXTH STREET MINNEAPOLIS, MINN.

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## Hercules Blocks

**Sell on Sight**



The dense non-porous blocks of Cement Stone made on

### Hercules Block Machines

satisfy the eye of the most critical architect or house builder. It is one of the chief merits of the Hercules Machine that it permits blocks to be made of WET concrete. This results in greater density, greater strength and greater water proofness. The Hercules is the only machine that expands with the requirements of your business. The only machine that makes dimension stone up to Six Feet long.

The Hercules is built upon one solid frame 6 feet long. If your demand is just for an 8x16 block, you only need the mould box for that size. As your trade increases, you merely add new plates to be attached to your original machine. You don't have to buy a new machine every time you wish to make a different size. There are many other points connected with Hercules machines you ought to know. These are fully told in a "little book" we have just issued. Send for it today.

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Be sure you get the genuine with the "Little Yellow Side-Label" on each package

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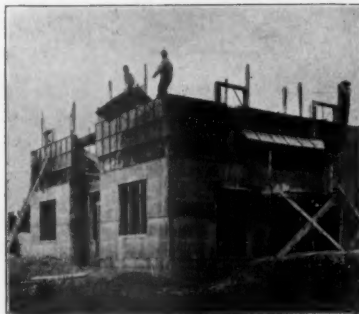
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PLASTER MILL: Ft. Dodge, Iowa  
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Reduces Cost, Eliminates Waste of Lumber and Labor



Note the "Swing Up", 30 feet (15 plates), raised in 10 minutes.

**Simple—Rigid—Indestructible**  
Any man can put it up. Adjustable to any dimensions and any thickness.

**No Bolts—No Nuts—No Wires**  
All wedge connection—locked and unlocked by a stroke of the hammer. Adopted on hundreds of buildings for Real Estate Companies, Railroads, and Foreign Contracts.

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## PERFECTION IN BLOCK MAKING

If you wish to attain this you should combine these three important features:

## Wet Process, Face Down, Damp Curing.

The PETTYJOHN INVINCIBLE Machine does this, and is the only machine that does. Tandem Invincible makes two blocks at once. Price \$65.00 and up. Single Invincible, \$35.00 and up. With our Triple Tier Racking System green blocks can be stacked three high direct from machine with inexpensive home-made rigging. Plans and blue prints free to customers. It economizes space, reduces off-bearing distance and above all insures slow, even, damp and perfect curing and bleaching.

Write for our latest edition of "Stone Making," a book of valuable data, just off the press—FREE.

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## THE "KENT" PRECISION MIXER

(STATIONARY TYPE)

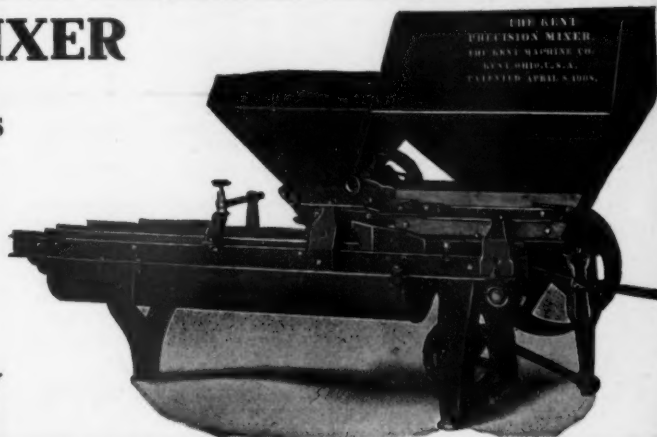
Built in Four Sizes and Suited to ALL CLASSES of Plants  
Making Concrete Products

The "Kent" is the only mixer made that will operate with absolute certainty when being charged by gravity from bins above the hoppers holding large quantities of materials, making it possible to run it continuously for hours at a time with little or no attention from the operator. It has a patented adjusting lever by which the output may be regulated to suit the work in hand. It measures the aggregates accurately in any proportions desired by simply adjusting the gates to the proportions wanted. Before purchasing a mixer investigate the "Kent." It means money and satisfaction for you.

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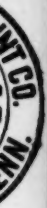
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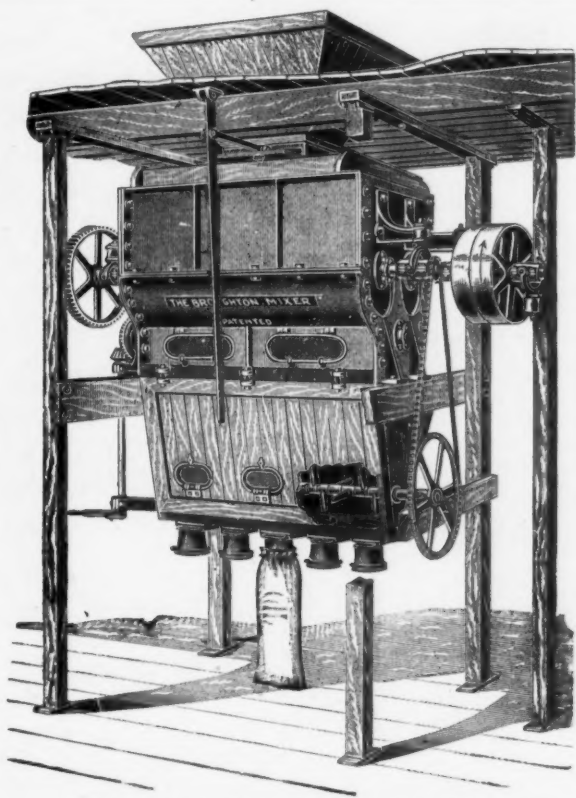
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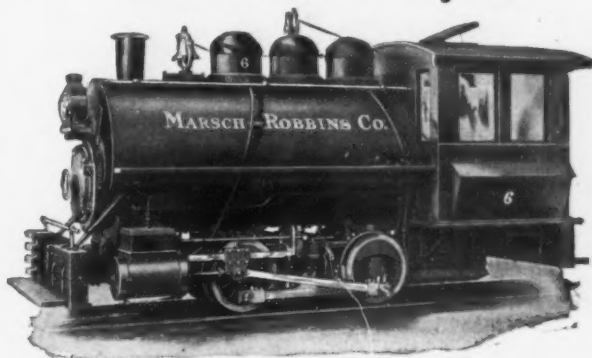




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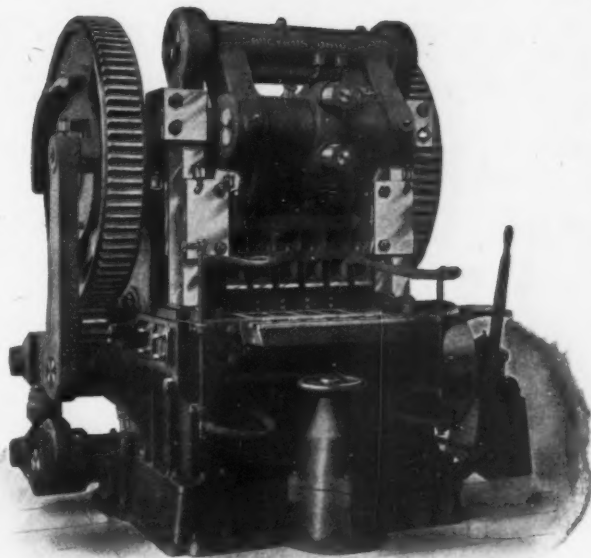
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We also build a full line of machinery and appliances for making Clay Products, Cement and Pottery, Dryers, and Dryer Apparatus.

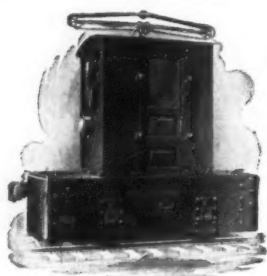
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On Anything Needed For  
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Porch Column and Baluster Outfits,  
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Special contractor's equipment, including Culvert Forms, Drain and Tile Moulds, Rock Crushers, Cinder Crushers, Elevators, Sand Screens, all tools needed for concrete work, Block Machines of every description, special forms, wheelbarrows, gasoline engines, ornamental moulds of all kinds, etc.

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**Our Cone Batch Mixer** Low intake of this mixer saves from \$60 to \$100 per month in labor cost alone. Mixer combines the principles of cone, cube and polygon shapes with the inside shifting and scattering of materials by paddles and scoops, adjustable for wet and dry mixes and all kinds of work. Discharging device shoots any quantity from shovel to cartload into the highest wheelbarrow or directly into moulds. All sizes from 7 ft. up—steam, gasoline or electric motor power. Send for Catalog describing Northwestern Mixers—Sidewalk, Contractors', Block Plant Mixers, Continuous Mixers, Elevators, Hand Mixers, etc.

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